

**Integrating Implementation of the
Convention on Biological Diversity
and the Rules of the
World Trade Organization**

IUCN project on the Convention on Biological Diversity and the International Trade Regime

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Integrating Implementation of the Convention on Biological Diversity and the Rules of the World Trade Organization

David R. Downes

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Foreword

It is now widely accepted that trade liberalisation need not necessarily undermine the environment and that, instead, there is great potential for trade to favour environmental objectives and foster sustainable development. The extent to which trade liberalisation either harms or favours the environment in reality depends to a great degree on how well trade and environmental policies are integrated, whether trade policies are balanced by adequate frameworks for environmental protection and sustainable development, and how both fit into the overall social and economic policy framework. Where policy coherence and balance are achieved, trade will support the environment; where policies are conflicting or contradictory, the environment stands to be harmed by the removal of barriers to trade.

Where – at the end of the Millennium and on the eve of a new round of multilateral trade negotiations – do we stand in terms of policy coherence, and in particular in respect of the harmony of trade and environment policy? Unfortunately, we seem still to stand far from the ideal of policy coherence, and worries about trade undermining environmental achievement at the international level are still very much alive, despite the analytical work undertaken by the World Trade Organization (WTO), its Committee on Trade and Environment (CTE), and several leading organizations in civil society.

Since the Earth Summit in Rio, trade liberalisation has charged ahead – especially with the conclusion of the Uruguay Round in 1994 and the establishment of the WTO the following year. Meanwhile progress on international environmental issues – despite marked successes – has proceeded at a much more modest pace. With trade outrunning the environment to such an extent, there is concern that trade rules may set limits on what the environment can achieve – and how it can achieve it.

Much ink has been spilled on the threat to the Multilateral Environment Agreements (MEAs) from possible challenge under the rules of the trading system. The analysis – in the WTO CTE and elsewhere – has done much to identify where conflict may arise, but has done little or nothing to resolve the issues to the satisfaction of both sides. To do so would require both a better understanding of how the trade rules affect individual MEAs and the political will to solve the problems once and for all.

David Downes' work addresses the first need in the case of the Convention on Biological Diversity (CBD). It offers a thorough review of the potential conflicts between the provisions of the CBD and the international trade rules, but also identifies areas where the two are complementary and could reinforce one another. Downes, a Senior Attorney with the Centre for International Environmental Law (CIEL) is an acknowledged expert on the CBD and also has considerable experience with trade issues and the trading system. His analysis is critical but objective. He does not presuppose the superior legitimacy of either regime, but simply draws attention to areas where the objectives of the one could be facilitated – or impeded – by the provisions of the other.

One of the great challenges of the coming years will be to achieve a negotiated peace – and ultimately an *entente cordiale* if not an alliance – between the two very different regimes.

Downes' contribution could provide a good brief to either side in approaching that challenge. It is an important contribution to the literature on trade and environment.

*Mark Halle, Project Director
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Biological Diversity and the International Trade Regime*

Executive summary

Introduction

During the 1990s, the international community has placed both biodiversity protection and trade liberalisation high on its agenda, as evidenced by the formation of global agreements and institutions. The 175 Parties to the 1992 Convention on Biological Diversity (CBD) have recognised the significant threat that human activities pose to the Earth's heritage of biodiversity – a heritage that is important for world food security and for the systems of the biosphere that sustain human life. Meanwhile, the 134 Member states of the World Trade Organization (WTO), established in 1995, have acknowledged the critical role that liberalisation of trade plays in stimulating economic development and prosperity.

To translate these shared values into policy, both the biodiversity and the trade regimes impose ambitious obligations on participating nations. The CBD's requirements seek to implement its objectives of conservation of biological diversity, sustainable use of its components, and equitable sharing of the benefits from genetic resources. The WTO's rules are aimed at removing trade barriers, preventing discrimination among participants in the world trading system, and promoting amicable, rules-based resolution of trade disputes.

These regimes are historically and institutionally distinct, but they find themselves increasingly linked through the many ways – both positive and negative – that trade rules affect biodiversity. Because they have developed separately, and involve very different communities, there is a risk that the rules and policies of one regime could hinder the effectiveness of the other, in the absence of efforts to reconcile the two.

Purpose of this Paper. In response to this risk, this paper seeks to encourage sustainable development by examining and building upon aspects of these two international regimes that complement each other. It also describes specific proposals for resolving or avoiding conflicts and promoting synergies between the WTO and CBD, including opportunities to support effective implementation of the trade-related aspects of the CBD. This information is intended as background for both trade and environment experts and officials, as well as for environment and development non-governmental organisations faced with the challenge of integrating the WTO and CBD regimes.

Links between Trade and Biodiversity. As the value of international trade increases in both absolute terms and as a percentage of overall economic activity, the potential of trade to affect biodiversity increases. The most obvious link between trade and biodiversity is that products derived from biological resources, such as timber, food, and wildlife products, are traded on international markets. Demand from abroad tends to intensify over-exploitation of wildlife and the conversion of habitat when trade rules do not provide incentives for sustainable management and incorporation of environmental costs into prices. However, trade in biological resources also has the potential to promote implementation of the CBD's objectives, as when genetic resources are used as a source of new commercial products. If the custodians of these resources can capture some portion of the economic benefit from these products, such trade can help to distribute benefits equitably and to create incentives for conserving biodiversity.

Indirect Effects of Trade on Biodiversity. Trade can also affect biodiversity through less direct channels, as when the transportation and other infrastructure that support trade threaten biodiversity. Pollution from vehicles and vessels and accidental spills can all threaten biodiversity, and construction of roads, canals and ports may displace species and degrade habitat. Foreign direct investment in infrastructure development and extractive industries can intensify impacts such as over-harvesting of species and conversion and degradation of habitat.

Relevant provisions and forums of the convention relating to biodiversity

The CBD establishes an ambitious set of general obligations that address the full range of human activities that affect biodiversity. While emphasising national action to conserve and sustainably use biodiversity within national jurisdiction, the CBD creates an international structure to support national implementation and to promote continued international co-operation. This structure includes a permanent Secretariat; a Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA); and a Clearing House Mechanism (CHM) to exchange and share information in support of scientific and technical co-operation. It also includes a multilateral fund to help finance implementation in developing countries, supported by developed countries and currently operated by the Global Environment Facility. Beginning in 1994, the Parties have held periodic meetings of the Conference of the Parties (COPs) to elaborate and build on the CBD, for instance by negotiating protocols (follow-up treaties on specific issues).

A number of the provisions of the CBD relate to management of the impacts of trade, most of them applying “as far as possible and as appropriate.” For instance, Article 6 (b) requires each Party to integrate biodiversity considerations into relevant sectoral and cross sectoral plans and policies. Other provisions of the CBD relate to trade because of their implications for natural resource management and production methods. Article 10(c), for example, provides that Parties shall “[p]rotect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.” This language would protect customary sustainable uses, which typically support local economies, from competition with more intensive commercial uses that often supply foreign markets, where those uses have substantial negative impacts on biodiversity.

The CBD defines a new approach to the exchange of genetic resources. Article 15 affirms national sovereignty over them, while seeking to establish a framework for terms of trade that encourages users of genetic resources to share benefits, including derived technologies, with the providers of those resources. The goal is to ensure that the collection of genetic resources minimises impacts on biodiversity, their use and international exchange involves sharing of benefits with the providers, and end products are designed and managed so that they do not threaten the environment. The CBD also calls upon Parties to facilitate access to and/or transfer of technology to developing countries.

Relevant rules and forums of the World Trade Organization

The WTO came into being as a result of the Agreement Establishing the World Trade Organization (WTO Agreement), the product of the Uruguay Round of multilateral trade

negotiations. The WTO Agreement was signed in Marrakesh in 1994 and is binding upon all 134 WTO Members. This Agreement contains a series of interlocking agreements, which set forth the bulk of the multilateral rules governing international trade (the “WTO rules”).

The basic principles of the world trading system are embodied in the General Agreement on Tariffs and Trade (GATT); originally signed in 1947, this agreement was incorporated into the Uruguay Round agreements. The GATT’s national treatment and most-favoured-nation obligations (Articles III and I) are essentially non-discrimination rules, forbidding Members from treating foreign products less favourably than domestic “like products” or from treating products imported from one WTO member less favourably than like products from another Member. Article XI prohibits quantitative restrictions, such as quotas or bans, on imports or exports. Article XX provides exceptions to these rules, including an exception for measures necessary to protect human, animal, or plant life or health, and another for measures relating to the conservation of exhaustible natural resources taken in conjunction with domestic restrictions.

Other relevant agreements of the WTO include: the Agreement on Trade Related Aspects of Intellectual Property (TRIPS Agreement); the Agreement on Technical Barriers to Trade (TBT Agreement); the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement); the Agreement on Subsidies and Countervailing Measures (Subsidies Agreement); the Agreement on Agriculture (Agriculture Agreement); and the WTO Understanding on the Settlement of Disputes. The TBT Agreement raises novel concerns because – unlike classic trade policy, which seeks to limit government interventions in the private market – it appears to require governments to intervene actively in the market to apply its principles to non-governmental, purely voluntary activities, including the definition of product standards and the application of eco-labels.

The WTO includes a number of forums in which decisions and discussions relevant to trade and biodiversity might take place. Each of the specialised agreements such as the TBT and SPS Agreements establishes a body such as a committee or council of WTO Members which meets periodically to review compliance and consider possible changes to the agreement. The WTO has also established a Committee on Trade and Environment (CTE). The CTE was created to resolve policy issues, but has made little progress to date. Instead, the WTO body that has made the most significant decisions for trade and biodiversity issues is the Dispute Settlement Body, in its decisions on disputes between Members. The most recent of these was the “Shrimp/Turtle” case in which Malaysia, Pakistan and Thailand challenged a US ban on shrimp caught without turtle excluder devices.

Interactions between the CBD and WTO rules

Assessing Trade Impacts of Biodiversity. To facilitate the development of policies that better manage the impact of trade on biodiversity, it will be necessary to develop and apply indicators for measuring trade’s impact on biodiversity. Several provisions of the CBD relate to this task. Article 6 (b), for instance, calls on each Party to integrate biodiversity considerations into relevant sectoral and cross sectoral plans and policies. Article 7 (c) and 8 (l) require each Party to identify and regulate or manage processes and categories of activities that threaten biodiversity.

The CBD has an appropriate structure and mandate to carry out this task, because its mission explicitly embraces sustainable development, including conservation and sustainable use, and it has access to interdisciplinary biodiversity expertise through the SBSTTA. Work on this subject under the auspices of SBSTTA would complement the work of the WTO Committee on Trade and Environment, which has tended to scrutinise the impact on trade flows of environmental measures while giving little attention to the impact on environment of trade flows and trade policy.

Guidelines for Sustainable Use of Biological Resources. In today's market economies, different producers of like products may impose very different environmental costs upon society, depending on the production and processing methods (PPMs) they use. In sectors that affect biodiversity, such as fishing, forestry and farming, it will be important to encourage biodiversity-friendly production through incentives for conservation and sustainable use, which governments are required to create under Article 11 of the CBD. Of course, standards or guidelines will be needed to distinguish producers whose biodiversity-friendly PPMs qualify them to enjoy the incentive from other producers whose PPMs are relatively destructive.

Among the possible market-based incentives that could encourage biodiversity-friendly production, eco-labelling is currently receiving the most attention and generating the most activity. Eco-labelling communicates accurate information about a product's environmental impacts from producers to consumers and allows consumers to select products based on environmental preferences. If consumers prefer products with eco-labels to products with unspecified environmental impacts, consumers will create incentives for producers to use more sustainable PPMs.

Tension with WTO rules arises because of past interpretations of WTO rules forbidding discrimination between "like" products. These interpretations held that it is forbidden to discriminate between products according to the PPMs by which they were produced. This approach is a convenient way of outlawing disguised protectionist measures. It responds to the legitimate concerns of developing countries that market measures like eco-labelling could operate to foreclose market access for developing country producers less able to meet labelling and certification standards. Yet this approach, applied inflexibly, would also block legitimate – and sorely needed – eco-labelling and other incentives to encourage sustainable development, for the many products that move in international trade.

Recently, the report of the WTO Appellate Body on the "Shrimp/Turtle" dispute sent a strong signal that PPM-based measures undertaken pursuant to multilateral agreements such as the CBD could be consistent with WTO rules, if properly implemented. Further clarification as to what would constitute proper implementation is needed to ensure that legitimate incentives are not hindered by an inflexible approach to PPMs.

The Shrimp/Turtle report identified Article XX of the GATT as a potential vehicle for making multilateral PPM-based measures compatible with WTO rules. Article XX allows exceptions to non-discrimination rules for legitimate environmental and conservation measures applied by governments. The TBT Agreement also accommodates certain measures that serve environmental objectives. In addition, it defers to international standards. The Appellate Body's hints that trade-related environmental measures based on multilateral understandings are exempted from GATT principles under Article XX support the notion that such measures could also receive deference under the TBT as international standards. Granting such deference would be good trade policy, as protectionism and unnecessary obstacles to trade are highly

unlikely to survive international negotiations between diverse interests such as producing and consuming countries.

The CBD could serve as an international forum for the development of such standards. It embodies the right balance of principles – including both conservation and sustainable use, and recognising the special needs of developing countries and the importance of poverty alleviation. Its structure, including the SBSTTA, allows it to draw on the multidisciplinary expertise needed to address the complex issues involved. And the CBD promotes the principle that developed countries must assist developing countries in meeting their obligations, which would mandate the provision of financial and technical resources to help developing country producers participate on an equal basis in systems of market incentives.

Alien Species. The introduction of alien species is a major threat to biodiversity, and is often associated with trade. Currently there is no agreement establishing minimum standards for protection against alien species overall, although multilateral instruments concerning particular types of introductions exist. The WTO Agreement on Sanitary and Phytosanitary Measures (SPS) limits governments' freedom to impose import controls to protect human, animal and plant health and the environment. The goal of the Agreement is to prevent barriers to trade, rather than to ensure that governments have adequate protective standards in place. The SPS presumes that "international standards" are consistent with the SPS Agreement and the GATT. An important step that the Parties to the CBD might take would be to develop a protocol on alien species, elaborating on Article 8(h), which calls on Parties to prevent the introduction of alien species and to control and eradicate alien species that threaten biodiversity. Alien species will be a priority item at the sixth COP, scheduled to take place in 2002. Decisions elaborating Article 8(h) could acquire the status of international standards recognised under the SPS Agreement.

Biosafety Protocol. The introduction of genetically modified organisms (GMOs) represents a special kind of alien species introduction, and one that may require special international attention because of the novel technical, legal and ethical issues that it raises. At the second COP to the CBD in 1995, the Parties established an Open-Ended ad hoc Group to negotiate a protocol focusing on the transboundary movement of GMOs. After a series of negotiating sessions, governments were unable to adopt a final text as planned in Cartagena, Colombia in February 1999, and the current goal is to conclude negotiations before the fifth COP in spring 2000. The protocol's relation to WTO rules has been controversial. Some countries have proposed (and the negotiating draft circulated toward the end of the last negotiating session contains) a clause providing that if the protocol and an agreement that pre-exists the protocol contradict each other, the earlier agreement takes priority and its rights and obligations are presumed to prevail. Whether or not the protocol includes such a clause – which would effectively provide for WTO supremacy over the biosafety protocol's standards – obligations under a protocol could be presumed consistent with WTO rules like the SPS and TBT Agreements, as international standards.

Subsidies. Subsidies to the private sector are a serious threat to biodiversity when they encourage over-investment in sectors that have high environmental externalities. Such subsidies allow businesses to avoid paying the full environmental costs for their activities. In sectors such as fisheries and forestry, subsidies encourage over-investment in exploitative equipment, expansion of harvesting operations beyond sustainable levels, and inefficient harvest techniques, thereby significantly intensifying adverse impacts on biodiversity. Subsidies to the agricultural sector are of particular concern, because they can encourage expansion of the

area of cultivation, and intensification of cultivation techniques and use of inputs, which exacerbate impacts on biodiversity. Subsidies send confusing messages to consumers, allowing products to be sold at prices that do not reflect the full environmental costs of production and thus distorting markets.

The application of trade disciplines to restrict governments' power to provide subsidies to domestic industries could help to achieve sustainable management of biological resources. However, such disciplines might also be used to challenge government efforts to support conservation measures that reward activity that provides environmental benefits, but might be construed as forms of subsidies. More work is needed by institutions such as those of the CBD to identify damaging subsidies, specify their impacts on biodiversity, and promote their elimination, while maintaining ability to invest in conservation activities for the public benefit. Such activity would contribute to implementation of Article 11 of the CBD, which requires the creation of incentives for conservation and sustainable use.

Sharing of benefits from the use of genetic resources and traditional knowledge: definition and application of intellectual property. The WTO and the CBD both include important provisions dealing with intellectual property. The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) of the WTO emphasises patents and other intellectual property rights defined under conventional intellectual property regimes. Until now, these rights have been primarily obtained and owned by inventors and corporations involved in the formal research sector in developed countries; indigenous traditional knowledge has not received equivalent legal protection. The CBD, in contrast, calls on Parties in Article 15 to ensure that a share of the benefits from genetic resources returns to the providers. In Article 8(j) it requires Parties to encourage the return of benefits from biodiversity-related traditional knowledge to the indigenous and local communities that are its custodians. The TRIPS Agreement and the intellectual property rights-related provisions of the CBD have radically different goals and perspectives, and co-ordinated efforts will be necessary to ensure that the two agreements are developed and implemented in a mutually supportive manner. Such efforts should focus on the question of how the WTO rules can support the CBD's objectives of promoting the sustainable use of genetic resources and associated knowledge of indigenous and local communities. The *ad hoc* working group on Article 8(j) should address this question, and along with the Secretariat should co-ordinate and exchange information with the TRIPS Council.

Relevant forums and processes

The task of integrating implementation of the CBD and the WTO rules should form part of the work of a number of relevant forums and processes. In addition to the CBD and WTO institutions discussed above, many other international instruments and institutions are also relevant to one or more of the linkages between trade and biodiversity. Of these, the Convention on International Trade in Endangered Species, the United Nations Environment Programme, the Food and Agriculture Organization, and the World Bank are a few examples. Regional institutions based on trade and economic relationships, such as the European Union, Mercosur, and NAFTA, are also important, as are regional groupings based on political or geographic alignments such as the Organization of American States, and groupings based on regional environmental issues such as regional fisheries management organisations.

While this paper has focused on international regimes, national and sub-national institutions are equally important. International trade and environment policies are formulated and implemented in national capitals by legislatures and government agencies. Ministries of environment, trade, foreign affairs, and bilateral assistance must all be involved in bringing international trade rules and biodiversity protection policies into alignment.

The optimal roles of the various organisations and instruments will depend on their comparative advantages in carrying out the various functions required at the international, regional, and national levels. Relevant functions include the establishment of norms, rules and guidelines; the collection of information needed for decision-making; provision of financial and technical assistance; and review of progress and performance (Kimball and Laughlin, 1998), including dispute settlement and enforcement.

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1

Introduction



The 1992 Convention on Biological Diversity (CBD), whose 175 Parties include the large majority of the earth's population and territories, is the centrepiece of international efforts to conserve humanity's heritage of biodiversity. Recognising the importance of biodiversity for world food security and the life sustaining systems of the biosphere, and thus for the survival and prosperity of humanity, the CBD seeks to integrate the goals of conservation, sustainable use and equitable benefit sharing from genetic resources.

The World Trade Organization (WTO), formed in 1995, is intended to provide a regulatory and institutional framework for the world trading system. It regulates national trade-related policies through a growing number of agreements that bind its 134 members. With the rapid growth in international trade, it has the potential to become one of the most powerful international organisations of the 21st century.

The relationship between principles of conservation and sustainable use and the WTO's rules and procedures has been controversial, as illustrated by well-known disputes such as the recent "shrimp/turtle" case. At the same time, questions have arisen about the relationship between the CBD's obligations and the regulatory principles of the world trading system. There is a risk that the rules and policies of one regime could hinder the effectiveness of the other, unless there are efforts to reconcile the two.

This paper seeks to encourage sustainable development by examining and building upon the aspects of these two important international regimes that complement each other. It describes specific approaches for avoiding conflicts and promoting synergies between the WTO and CBD. It also identifies specific opportunities to support effective implementation of the trade-related aspects of the CBD. This information is intended as background for trade and environment experts and officials, and for environment and development non-governmental organisations (NGOs) who are faced with the challenge of integrating the WTO and CBD regimes.

Although the two regimes are historically and institutionally distinct, they are becoming increasingly interconnected because of the many ways – both positive and negative – that trade can affect biodiversity. Perhaps most important are the effects of trade in products derived from biological resources. The export of timber, agricultural and wildlife products can intensify over-exploitation of wildlife and the conversion of habitat. By stimulating production, trade – which in turn is stimulated by factors such as demand in importing countries – can be an underlying cause of exploitation of species and conversion of ecosystems.

The transportation and infrastructure that support trade can have serious impacts. Pollution from vehicles and vessels and accidental spills of chemicals or oil can threaten biodiversity.

Construction of roads, canals and ports may displace or degrade biodiversity and habitat. Transport of goods in trade can result in the introduction of alien species, which can displace native species and destabilise ecosystems. The introduction of alien species through trade is frequently accidental but sometimes deliberate.

Another impact of trade on biodiversity involves the release of genetically modified organisms (GMOs), referenced in the CBD by the term “living modified organisms.” A special kind of alien introduction occurs when an alien gene – sometimes a gene from an organism in a completely different phylum – is inserted into an organism and the new organism is introduced into the environment. Parties to the CBD are currently negotiating a “biosafety” protocol to control the environmental impacts of such organisms, with particular emphasis on those that are traded.

Foreign direct investment (FDI) – trade in capital – is an increasingly important category of trade which often has significant impacts on biodiversity. FDI in infrastructure for export transportation (such as roads or pipelines) often causes serious loss and degradation of habitat (see, e.g., Soltani and Osborne, 1997). Investment in extractive industries can overwhelm regulatory capacity, and intensify over-exploitation of species and conversion of habitat.

Rules and policies for liberalisation of trade and investment can intensify all these effects on biodiversity by stimulating or facilitating the development of new trade flows, the expansion of existing flows, the intensification of production techniques and the expansion of productive capacity. In addition, the application of trade rules, as they have been interpreted to date, can interfere with national and possibly international conservation laws and policies – especially those which seek to control threats posed by trade or consumption of traded goods – thus magnifying the impacts of trade on biodiversity. Already there have been several challenges to conservation laws under the General Agreement on Tariffs and Trade (GATT) and the WTO, such as the tuna/dolphin and shrimp/turtle cases. On the other hand, some trade rules, in particular disciplines on government subsidies to industry, might be applied so as to reduce impacts of production on biodiversity.

The value of international trade is increasing rapidly, both in absolute terms and as a percentage of overall economic activity.¹ The precise impacts of trade depend on the type of good being traded and the manner in which it is moved and exchanged. Overall, however, the interactions between trade and biodiversity are likely to become increasingly important as growth in world trade continues.

While some developing countries have gradually diversified their economies, others continue to depend heavily on exports of primary commodities. The production and harvest of these same commodities can have severe impacts on biodiversity, for instance when habitat is converted for farming or degraded by logging. Such exports make up a large proportion of foreign earnings by these countries; they also loom large in terms of the ecological impact of their production and their importance to domestic employment and livelihoods. Until world prices for these commodities adequately internalise the environmental costs of their

¹ Gross world product (in terms of the value of goods and services exchanged through monetary transactions) grew from \$24.6 trillion in 1992 to an estimated \$28 trillion in 1996 (Brown, *et al.* 1997, p.67). Meanwhile, international trade grew from \$7.56 trillion in 1992 to \$10.6 trillion in 1996 (IMF 1996, pp.115 and 119).

production, developing countries will face difficult tradeoffs between environment and export opportunities.

The nature of the impact of commodity production on biodiversity depends not only on the quantity of production but also the quality of the production or processing method (PPM). Producers choose among more or less environmentally friendly PPMs according to the prices for which products can be sold, the potential volume of sales, and the availability and cost of needed know-how, capital, labour, and material resources.

Producers' selection of PPMs is affected not only by incentives built into the economic system, but also by the extent to which laws and policies reward efforts at sustainability, require internalisation of environmental costs, or forbid PPMs with environmental costs deemed excessive.

The international trading system comprises a number of laws, policies, markets and other institutions that shape producers' choices. The system may operate either to encourage or discourage production that is friendly to biodiversity and other environmental values. Whether the trading system does so depends on what kinds of signals are sent through trade and through the rules of trade. These signals reflect the preferences expressed by import/export firms, distributors and ultimately consumers in foreign markets for one product and/or its PPM over another. The preference may depend on several factors, including price, quality, availability, access to information and concern about environmental and social impacts of production. It also depends on whether trade rules encourage or discourage mechanisms such as labels for allowing consumers to understand the impacts of their purchasing choices. Finally, buyer preference is also affected by the extent to which trade rules provide for internalisation of environmental costs into the prices of traded goods (to date, they do not). Of course, while this discussion focuses on internationally-traded products, consumers, distributors and retailers send such signals in domestic markets as well.

If the laws and policies affecting consumption and production, including trade rules, effectively internalise costs and encourage transmission of information between producers and consumers about environmental impacts, then the result should be sustainable production and trade. One example of a trade regime that can promote sustainable resource management is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Under CITES, internationally agreed-upon mechanisms for regulating trade in endangered species have had some success in restoring endangered populations of wildlife while maintaining production of goods that benefit local communities. The implementation of CITES demonstrates the potential for creating economic incentives within the trading system for continued conservation of wildlife as a resource.

Another category of relationships between trade and biodiversity which are potentially "positive" involve the use of genetic resources as a source of new products. Genetic resources – the foundation of all biodiversity – and associated chemicals found in diverse species are of increasing value as sources of new crop varieties, medicines, pesticides, biotechnological processes and other products. Crop genetic diversity consists of traditional crop varieties and wild relatives of crop species, and is situated mainly within the developing world. Ecosystems such as tropical rainforests and coral reefs, known to be rich in species of plants and animals that could provide sources of biochemicals, are also found primarily in the developing world. Most technological and scientific capacity to develop and commercialise new products from these resources is, however, in the developed world. Historically, this situation has engendered

North-South debate over what constitutes fair terms of trade in genetic resources, and who should profit from products developed from them.

The economic value of genetic resources is difficult to measure, whether as a whole or in particular cases. For one thing, it is difficult to separate their value from the value of the many other inputs such as research and development that go into new products.² For another, there has never been a true market for genetic resources. Until the conclusion of the CBD, in fact, the “universally accepted principle” was that plant genetic resources were “a common heritage of mankind” that should be “available without restriction” (FAO, 1983; FAO, 1989). The CBD, as discussed below, embodies a new set of principles under which the providers of genetic resources control access to them, in order to gain an equitable share of the benefits from their use.

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Genetic resources from a particular crop variety or wild relative, if used in developing a new variety, are likely to be combined with genetic resources from many other varieties. With pharmaceutical products, a smaller number of species generally contribute compounds for a final product, but the probability is low that any given sample of an organism randomly collected from an ecosystem will be the source of a new pharmaceutical product.

2

Relevant provisions and forums of the Convention on Biological Diversity



As of March 1999, 174 countries and the European Union were Parties to the CBD.¹ The CBD has three objectives: conservation of biodiversity, sustainable use of its components, and equitable sharing of benefits derived from genetic resources.² The CBD establishes a framework of general, flexible obligations that Parties must apply at the national level.³ It creates an international structure to support national implementation and to promote continued international co-operation. This structure includes a permanent Secretariat; a Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA); a Clearing House Mechanism to exchange and share information in support of scientific and technical co-operation; and a multilateral fund to help finance implementation in developing countries, supported by developed countries and currently operated by the Global Environment Facility.

Beginning in 1994, the Parties have held periodic meetings of the Conferences of the Parties (COPs) to elaborate and build on the CBD, for instance by negotiating protocols (follow-up treaties on specific issues). The COP asked Parties to submit their first national reports, focussing on implementation of Article 6, to the COP's fourth meeting. By March 1999, 109 reports had been received, some of them interim reports.⁴

The CBD's preamble notes that "it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source" (Preamble). Trade is often an underlying cause of the activities that have immediate impacts on biodiversity. Trade, in turn, is driven at least in part by consumption in importing countries. The Parties have an obligation to manage the effects on biodiversity of trade and consumption within their jurisdiction "regardless of where [those] effects occur" (Article 4(b)).

A number of the provisions of the CBD relate to management of the impacts of trade, for the most part applying "as far as possible and as appropriate." For instance, Article 6(b) requires

¹ A list of parties is included as Appendix 1.

² See Appendix 3 for text of selected provisions.

³ This paragraph is adapted from Downes 1996.

⁴ See *National Reports*, on CBD Secretariat web site, Web location: <http://www.biodiv.org/natrep/index.html>.

each Party to integrate biodiversity considerations into relevant sectoral and cross sectoral plans and policies. Article 7(c) and 8(l) require each Party to identify and regulate or manage processes and categories of activities that threaten biodiversity. Implementing these requirements will first necessitate the development and application of methodologies to determine precisely what the biodiversity impacts are of various trade flows. If such an assessment identifies significant negative impacts, Parties will need to address them through reform of trade policies or the regulation of trade in the sectors identified as having impacts.

Similarly, Article 10(b) provides that Parties shall “[a]dopt measures relating to the use of biological resources to avoid or minimise adverse impacts on biological diversity.” Article 14 provides that Parties shall establish procedures for environmental impact assessment of projects, as well as arrangements for considering impacts on biodiversity of programmes and policies. Article 8(h) requires Parties to “[p]revent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.”

In addition to these conservation-oriented requirements, the CBD emphasises the need to encourage and ensure sustainable use of biological resources. Article 10(c), for example, provides that Parties shall “[p]rotect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.” Arguably, this language requires the Parties to provide protection of such customary sustainable uses against “incursions from competing users of resources” (Downes, 1996, p.210).

Also important is Article 11, which requires the adoption of “economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity.” Reform of trade law and policy – a principal instrument of economic policy and regulation in today’s global economy – to encourage sustainable trade will be an essential part of implementing Article 11. One example of the creation of such incentives is the co-operation under CITES by Andean producers and importing countries to manage trade in the wool of the vicuña through national and international regulation.

The CBD addresses the “positive” as well as the “negative” impacts of trade on biodiversity. While requiring Parties to control trade-related threats to biodiversity, the CBD also recognises that trade in at least one component of biodiversity – genetic resources – can support conservation and sustainable development if properly structured and controlled.

The CBD defines a new approach to the exchange of genetic resources, affirming national sovereignty over them as opposed to the principles of common heritage and free access that were previously understood to govern plant genetic resources for food and agriculture. In this regard, Article 15 provides that Parties shall control access by other Parties to their genetic resources through national legislation and that access shall be by prior informed consent and on mutually agreed terms. Articles 15, 16 and 19 provide that the users of genetic resources shall share the benefits, including derived technologies, with the providers of those resources.

These provisions aim to define terms of trade so that trade in genetic resources will be beneficial for all those involved. Combined with other provisions of the CBD, this language seeks to ensure that collection of genetic resources minimises impacts on biodiversity, that their use and international exchange involves sharing of benefits with the providers, and end products such as GMOs are designed and managed so that they do not threaten the environment. In this, the CBD reflects the notion that the development of arrangements for returning

benefits from biodiversity's use to those who are its custodians could create significant incentives for conservation and sustainable development and could also educate the public on the value of biodiversity for humankind. Because of this "innovative approach to the interplay of trade and environmental concerns," the CBD has been characterised as a precedent-setting "sustainable trade agreement" (Downes 1996, p.202).

At several points the CBD requires Parties to facilitate access to and/or transfer of technology to developing countries. Because a significant part of the technology relating to the use of genetic resources or derived from them is protected by intellectual property rights, questions have arisen about the relationship of the CBD's technology transfer provisions to the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) of the WTO. In particular, Article 16(2) provides that access to and transfer of technology subject to patents and other intellectual property rights shall be provided on terms "which recognise and are consistent with the adequate and effective protection of intellectual property rights." At the same time, this obligation is subjected to the proviso in Article 16(5) that Parties, "recognising that patents and other intellectual property rights may have an influence on the implementation of [the CBD], shall co-operate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives." Other provisions relating to technology transfer and development are found in Articles 15(7), 16(1), 16(3), 16(4), 17, 18, and 19.

Genetic resources and other aspects of biodiversity are often developed and conserved through practices of local and indigenous communities. The CBD recognises the desirability of sharing benefits from traditional knowledge and innovations equitably (Preamble). Article 8(j) calls on Parties to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biodiversity." Parties must obtain the communities' consent for wider use of such knowledge and innovations and must encourage equitable sharing of the benefits from such use. These requirements are "subject to national legislation." These provisions' emphasis on the protection of intellectual creations that are generally part of the public domain under existing intellectual property systems has also raised questions about the CBD's relationship with the TRIPS Agreement.

Some countries, such as Costa Rica, the Philippines and the members of the Andean Pact, are moving forward with domestic and regional implementation of these general principles (UNEP, 1995; UNEP, 1996c; UNEP, 1998). As a practical matter, however, most CBD Parties have yet to implement specific legislation or other measures in this complex area.

3

Relevant rules and forums of the WTO



The Uruguay Round agreements were negotiated in the Uruguay Round of multilateral trade negotiations and were signed in Marrakesh in 1994. These agreements are binding upon all 134 WTO Members (see Appendix 2 for a list of WTO Members) and in total are referred to here as the “WTO rules.” Most relevant for this discussion are:

- the General Agreement on Tariffs and Trade (GATT); originally signed in 1947, this agreement was incorporated into the Uruguay Round agreements that bind WTO Members as the “GATT 1994”;
- the Agreement on Trade Related Aspects of Intellectual Property (TRIPS Agreement);
- the Agreement on Technical Barriers to Trade (TBT Agreement);
- the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement);
- the Agreement on Subsidies and Countervailing Measures (Subsidies Agreement);
- the Agreement on Agriculture (Agriculture Agreement); and
- the WTO Understanding on the Settlement of Disputes. (The dispute settlement body and other relevant bodies are discussed under “WTO Forums” below.)

While WTO rules currently require very minimal steps toward liberalisation of investment in the Agreement on Trade-Related Investment Measures, it is possible that stronger obligations will be negotiated in future negotiating rounds as explained in the box on page 16.

3.1 The General Agreement on Tariffs and Trade (GATT)

The GATT’s national treatment and most-favoured-nation obligations are basically non-discrimination rules. They forbid Members from treating foreign products less favourably (for example through higher taxes or more stringent regulation) than domestic “like products” or from treating products imported from one WTO Member less favourably than like products from another Member (Articles III and I). The term “like products” has been defined in past GATT and WTO dispute panel decisions to mean products with the same or similar physical characteristics or end uses. As a result, environmental trade measures that distinguish between products based on production or processing methods (PPMs) have been found to violate these obligations. The GATT also prohibits most quantitative restrictions on imports and exports of goods, such as quotas or bans (Article XI).

Article XX of the GATT, however, provides exceptions to these rules. Article XX(b) excepts measures necessary to protect human, animal, or plant life or health. Article XX(g) excepts measures relating to the conservation of exhaustible natural resources taken in conjunction with domestic restrictions. In addition, Article XX(a) provides an exception for measures “necessary to protect public morals.” To qualify for any of these exceptions, a measure must also satisfy the requirements of the *chapeau* to Article XX. These requirements are that a measure shall not constitute arbitrary or unjustifiable discrimination between countries where the same conditions prevail and shall not constitute a disguised restriction on international trade.

It remains uncertain whether and how the GATT obligations and exceptions would relate to measures implementing the CBD, such as import restrictions on GMOs to protect the environment or export restrictions upon genetic resources to promote benefit sharing. A series of cases brought under international trade dispute resolution procedures – first under the GATT and then under the WTO – have challenged trade-related measures aimed at protecting the environment or conserving natural resources on the grounds that they are inconsistent with GATT obligations. To date, however, no trade dispute has challenged a measure directly authorised by the CBD or any other multilateral environmental agreement (MEA). There are strong arguments that the Article XX exceptions under the GATT should be generally understood to except MEA-based trade-related measures from GATT principles.¹

3.2 The Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS)

The TRIPS Agreement requires WTO Members to meet certain minimum standards for protection of intellectual property.² Categories of intellectual property covered by the Agreement include copyrights, patents, plant variety protection (PVP), industrial designs, geographic designations, layout-design of integrated circuits, and trade secrets. The Agreement also requires Parties to provide fair, effective judicial procedures and remedies for rights-holders claiming infringement (Articles 42–49). It provides developing countries with a five-year grace period to phase in most of the Agreement’s requirements (Article 65). Least developed countries have an eleven-year grace period from implementing most obligations (Article 66). During these grace periods, these countries nevertheless must take on significant interim obligations to protect intellectual property, as illustrated by the United States’ recent successful WTO challenge to India’s inadequate implementation of TRIPS (WTO, 1997).

The TRIPS Agreement requires WTO Members to observe the principles of national treatment and most-favoured-nation with respect to intellectual property (Articles 3– 4). For example, a country shall not recognise patents on inventions by its nationals (its citizens and corporations) without doing the same for similar inventions by foreign nationals, nor shall it discriminate among inventions by nationals of different foreign countries.

Patents and PVP are the types of intellectual property covered by the TRIPS Agreement that are most likely to affect the achievement of the objectives of the CBD, although trade secrets

¹ For further elaboration of such arguments, see, for instance, Downes and Van Dyke, 1998, p.28.

² Much of the discussion of the TRIPS Agreement is adapted from UNEP, 1996a.

and geographic indications may also have some relevance. Article 27 recounts the basic elements of a patent; Article 31 sets out a number of conditions limiting the circumstances in which a government may authorise use of a patent against the will of the patent owner, subject to appropriate compensation (termed compulsory licensing).

The TRIPS Agreement requires countries to recognise patents on products and processes in most areas of technology. As a result, a number of developing countries are finding it necessary to revise their patent laws to remove exceptions from patenting for certain categories of technology, such as pharmaceuticals.

Article 27.3(b), however, allows WTO Members to maintain exceptions from patenting for plants and animals and essentially biological processes, but they must provide for patenting of modified micro-organisms and “microbiological processes.” That article also requires countries to protect plant varieties either through patents or an “effective *sui generis* system” or both. In addition, WTO Members may exclude products or processes from patenting where “the prevention within [national] territory of [their] commercial exploitation ... is necessary to protect *ordre public* [public order] or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment” (Article 27.2).

The Council for Trade-Related Aspects of Intellectual Property Rights (the TRIPS Council) is established under Article 68 to monitor the operation of the Agreement, monitor WTO Members’ compliance with its terms, and provide a forum for consultations on trade-related aspects of intellectual property.

In 1999, the TRIPS Council will review Article 27.3(b) of the TRIPS Agreement. Currently, Council Members do not agree on what changes, if any, should be made to the Article. Some developed countries would like to remove the exception for plant and animal patenting and possibly narrow the flexibility to create *sui generis* plant variety protection. Some developing countries, on the other hand, feel that the existing flexibility is necessary to allow them to design measures for implementing the CBD. There have also been calls for increasing flexibility, for instance by expanding the exception from patenting to include micro-organisms as well as plants and animals.

3.3 The Agreement on Technical Barriers to Trade (TBT Agreement)³

The TBT Agreement is intended to ensure that WTO Members do not use technical regulations and standards as disguised measures to protect domestic industries from foreign competition. It is also intended to reduce the extent to which technical regulations and standards operate as barriers to market access, primarily by encouraging their harmonisation. Harmonisation is expected to reduce the obstacles to international trade that can be created by the difficulty of complying with numerous, sometimes incompatible, standards and regulations in various countries.

The TBT Agreement creates different but related obligations for two defined categories of measures, regulations and standards. A “technical regulation” establishes mandatory require-

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Most of the discussion of the TBT Agreement is drawn from Downes and Van Dyke, 1998.

ments for products or related processes and production methods (PPMs). A “standard”, in contrast, establishes *voluntary* requirements for “products or related processes and production methods.” Both regulations and standards may also relate to “terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method” (TBT Agreement, Annex I).

The TBT Agreement also applies indirectly to private and voluntary schemes through the Agreement’s Code of Good Practice for the Preparation, Adoption and Application of Standards (the Code). Under the Code, a Member is obliged to “take such reasonable measures as may be available to [it]” to ensure compliance with the Code of private voluntary programmes within its territory, including its most-favoured-nation and national treatment obligations. Analogous language found in the GATT requiring countries to take such reasonable measures as are available to them has been interpreted by past dispute panels to require governments to take all constitutionally-available means.

The rules of the TBT Agreement, including its Code of Good Practice, prohibit both regulations and standards from discriminating between domestic products and foreign products that are alike (national treatment) and between “like” products from different WTO Members (“most-favoured-nation”).⁴ Further, standards and regulations must not constitute unnecessary obstacles to trade, although if a regulation or standard is shown to be based upon an international standard, it is presumed not to create such an obstacle. In addition, Members must ensure that central governmental standardising bodies improve transparency and involve interested parties in standard setting; they must take reasonable measures to ensure that regional standardisation bodies of which they are members do the same; and they must make reasonable efforts to harmonise technical rules at the international level.

While the TBT Agreement does not contain an explicit environmental exception, its preamble contains language paralleling that found in the environmental exception of Article XX of the GATT. The preamble recognises that “no country should be prevented from taking measures necessary to ensure ... the protection of human, animal or plant life or health, [or] of the environment ... at the levels it considers appropriate.”⁵ In addition, Article 2.2 provides that the “legitimate objectives” of technical regulations and standards include “protection of human health or safety, animal or plant life or health, or the environment.”

It is probable, although not entirely clear, that the TBT Agreement covers labelling standards concerning non-product related criteria, such as criteria related to process or production methods (PPMs).⁶ Currently there is debate about whether and how the TBT Agreement’s obligations might apply to eco-labelling initiatives. If the Agreement were interpreted to apply to eco-labelling initiatives in a way consistent with some past GATT decisions on trade and environment, they might be found inconsistent with its requirements. As a policy matter, some developing countries are concerned that eco-labelling could operate to foreclose market access

⁴ While the wording is slightly different, these obligations are substantially the same as those in the GATT.

⁵ This language goes beyond the language of Article XX(b) in that it refers explicitly to the environment. Article XX(b) has, however, been interpreted by GATT and WTO panels to encompass measures generally considered environmental within its language referring to measures “necessary to protect human, animal or plant life or health.”

for developing country producers less able to meet labelling and certification standards. Thus, it will be important to develop both eco-labelling initiatives and relevant interpretations of the TBT Agreement in ways that address concerns about market access while realising the potential of this market tool for protecting biodiversity (Downes and Van Dyke, 1998, p33).

3.4 The Agreement on Sanitary and Phytosanitary Measures (SPS Agreement)

The SPS Agreement establishes trade disciplines for regulations aimed at protecting human, animal and plant health within a WTO Member's territory from risks due to diseases, pests, disease-carrying organisms, and disease-causing organisms, as well as from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs. The SPS Agreement requires Members to "ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, [and] is based on scientific principles ... [and] sufficient scientific evidence" (Article 2.2). "In cases where relevant scientific evidence is insufficient, [however,] a Member may provisionally adopt [SPS] measures on the basis of available pertinent information, including that from the relevant international organisations as well as from [SPS] measures applied by other Members" (Article 5.7).

In addition, Members must ensure that their SPS measures are consistent with the non-discrimination principles of most-favoured-nation and national treatment.⁷ Furthermore, SPS measures "shall not be applied in a manner which would constitute a disguised restriction on international trade" (Article 2.3). Measures that "conform to" international standards are presumed to be consistent with the SPS Agreement and the GATT (Article 3.2).

The SPS Agreement would apply to regulations to protect the environment and biodiversity against introductions of alien species and GMOs via trade pursuant to Articles 8(g) and 8(h) of the CBD. Because of the very different perspectives of the two agreements, particularly on the precautionary approach there is potential for conflict between them as discussed in Parts 4.1.3 and 4.1.4.

3.5 The Agreement on Subsidies and Countervailing Measures (Subsidies Agreement)

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The term non-product-related criteria refers to criteria that distinguish between products according to factors not related to the characteristics of the product itself. In the context of eco-labelling the most relevant non-product-related criteria are standards relating to the impacts on the environment or biodiversity of production or processing methods (PPM). Another example of non-product-related criteria would be a requirement that an imported good have been produced by the rightful owner of a relevant patent or a licensee of that patent holder – a requirement that in fact WTO Members are authorized to impose under Article 51 of the TRIPS Agreement.

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Article 2.2. These obligations are phrased differently from their counterparts in the GATT, but appear to embody substantially the same standard.

The Subsidies Agreement places restrictions on the power of WTO Member governments to provide subsidies to industry. It defines a subsidy broadly to include the conferral of a benefit to industry resulting from a financial contribution by a government or any public body within a Member's territory involving: direct transfer of funds, foregone government revenues (such as tax credits), provision of goods or services other than general infrastructure, purchases of goods, or provision of income or price support as provided under Article XVI of the GATT. Such activities are also covered if the government arranges for them to be carried out by a funding mechanism or private body.

If a subsidy is "actionable" as defined under the Agreement, it can be challenged by another Member through the WTO dispute resolution procedure. To be actionable, a subsidy must be "specific". A subsidy is specific if it is made available only to a certain enterprise or industry or group of enterprises or industries within the jurisdiction of the granting authority. In addition, to be actionable, a subsidy must injure another Member's domestic industry, cause that Member serious prejudice, or nullify or impair benefits to that Member under the GATT.⁸

The Subsidies Agreement creates a narrow window for Members to provide certain types of subsidies, within strictly defined limitations, for adaptation of existing facilities to new environmental requirements, if they notify other Members of the existence of the subsidies (Article 8.2(c)). Subsidies in agriculture, one of the major sectors affecting biodiversity, are exempted entirely from the Subsidies Agreement, and cannot be challenged under its provisions. Some agricultural subsidies are, however, disciplined to some extent under the Agreement on Agriculture (see discussion below).

As discussed below under Part 4.1.5, there is potential for the rigorous application of the Subsidies Agreement to reduce subsidies for primary commodity production in biological resource-dependent sectors such as forests and fisheries. This could reduce "perverse" incentives that encourage loss of biodiversity, thus helping to achieve the CBD's objectives of conservation and sustainable use.

3.6 The Agreement on Agriculture

The Agreement on Agriculture represents an initial step by WTO Members to reduce "agricultural support and protection ... [to correct and prevent] restrictions and distortions in world agricultural markets" (Preamble). It includes measures to constrain government subsidies to some extent and to reduce import barriers, in part through "tariffication" in which barriers such as quotas are converted to tariffs. Only a limited number of categories of products are currently regulated by the Agreement, however. The Agreement provides for the renewal of negotiations in 2000 to address the significant market barriers that remain.

The Agreement commits Members to reduce gradually the level of subsidisation of agricultural products in designated categories. It obligates Members to make concessions to other Members to increase access to their markets for designated products. The Agreement covers domestic as well as export subsidies, but domestic subsidies are generally permissible as long as they do not cause significant trade distortions. To the extent that subsidies are consistent with

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Serious prejudice as defined under the Agreement includes, for example, where the subsidy covers an industry's operating losses, provides for direct forgiveness of debt, or causes displacement of imports of another Member's like products into the subsidizing Member's market or a third country's market.

the terms of the Agreement, Members enjoy substantial protection from retaliatory measures by other Members.

The Agreement has no binding language on environmental and development issues. The Agreement's Preamble notes that:

the reform programme should be made in an equitable way among all Members, having regard to non-trade concerns, including food security and the need to protect the environment; having regard to the agreement that special and differential treatment for developing countries is an integral element of the negotiations

By promoting the reduction of subsidies, the Agreement on Agriculture will probably reduce perverse incentives found in a number of countries that encourage farmers to plant marginal lands, intensify use of pesticides and fertilisers, and avoid rotating crops. On the other hand, the Agreement could also discourage governments from offering some types of incentives to encourage farmers to invest in environmentally beneficial practices. Some critics argue that the Agreement's market barrier reductions impose obligations upon developing countries out of proportion to the limited benefits they may gain from the circumscribed reductions in subsidies (the bulk of which are conferred by developed country governments), thus threatening food security and the environment.

Because agricultural practices affect land use so profoundly, the implementation of the Agreement is likely to have significant implications for biodiversity. Efforts should be made to promote increased consideration of biodiversity among WTO Members, before and during the next round of talks beginning in 2000.

3.7 Relevant WTO Forums

The agenda of the WTO Committee on Trade and Environment (CTE), defined at the close of the Uruguay Round, includes the impact on trade of environmental measures, the relationship between TRIPS and the environment, and the relationships between multilateral environmental agreements (MEAs) and the multilateral trading system. As of the beginning of 1999, the CTE had made very little progress toward resolving any of the issues on its agenda.⁹

As a result of this lack of progress, it is possible that Members will begin to address environmental issues within other specialised bodies in the context of specific agreements. Already, the TBT Committee has touched on eco-labelling in its discussions. Similarly, the TRIPS Council could debate the relation of intellectual property to biodiversity during its 1999 review of Article 27.3(b), the TBT Committee might discuss timber or fish product eco-labels, or the Committee on Agriculture might consider the impact of farming subsidies on biodiversity. Thus far, however, these bodies have shown little inclination to take on the environmental problems that have stymied the CTE.

In sum, WTO Members have not yet succeeded in achieving resolution of trade and environmental concerns in any WTO deliberative body. The practical result is that the primary WTO forum for trade and environment issues has become its dispute resolution proceedings

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See Trade and Environment in the GATT / WTO: Background Note by the Secretariat, Web location: http://www.wto.org/hlms/tr_envbadoc.htm.

Box 1. Investment liberalisation: The Agreement on Trade-Related Investment Measures (TRIMS Agreement) and subsequent negotiations

As noted above, trends in foreign direct investment can have significant impacts on biodiversity. While the Agreement on Trade-Related Investment Measures (the TRIMS Agreement) concluded in the Uruguay Round imposes weak obligations to liberalise investment, developed countries are working within the Organisation for Economic Co-operation and Development to negotiate a stronger Multilateral Agreement on Investment (MAI) that will be open for ratification by all countries. Recently, negotiations appear to have stalled. Developed countries are also pressing, however, for negotiation on an investment liberalisation agreement within the WTO, possibly as part of the “millennium round” of negotiations scheduled to begin in 2000.

The draft MAI illustrates how investment liberalisation rules could conflict with the CBD’s objectives. Proposed expropriation provisions, which provide for compensation when a company is deprived of its investment by a measure “tantamount to expropriation”, could raise serious problems for environmental regulation. In 1997, for example, the Ethyl Corporation filed a US \$250 million claim against the Canadian government under similar provisions found under the North American Free Trade Agreement, after Canada imposed an import ban on the possibly toxic gasoline additive MMT, of which Ethyl was the leading supplier. The company argued that the regulation was equivalent to an expropriation of its investment and must be compensated. The argument was based on the theory that the regulation constituted a “substantial and unreasonable interference with the enjoyment” of a property right in the form of the right to profitably operate a wholly owned Canadian subsidiary of Ethyl which distributed the MMT in Canada (Notice of Arbitration 1997). Canada settled the case in 1998, paying a reported US \$13 million and providing a written apology. Such challenges under a future agreement could for example inhibit or force the roll back of conservation regulations applied to the private sector to implement the CBD’s obligations.

Stringent most-favoured-nation (MFN) and national treatment (NT) requirements such as those proposed in the draft MAI could force governments to provide access to genetic resources and associated traditional knowledge on equal terms to both domestic and foreign access-seekers. This could clash with the CBD’s emphasis on special measures to ensure an equitable share of benefits for developing countries and local and indigenous communities. Such MFN and NT requirements could also conflict with national measures limiting access to biological resources, such as fisheries, to locals, potentially conflicting with measures to protect customary use under Article 10(c) of the CBD.

under the WTO Understanding on the Settlement of Disputes. This agreement establishes an elaborate mechanism for binding resolution of disputes according to WTO rules. The dispute settlement mechanism is intended to maintain a rules-based system to prevent trading nations from engaging in unconstrained use of economic power to impose protectionist, excessively burdensome, arbitrary or discriminatory measures on trading partners.

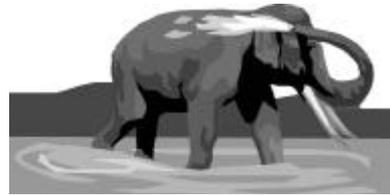
Examples of dispute settlement proceedings addressing trade and environment issues include the appellate body decision affirming the US challenge to the EC bovine growth hormone ban (discussed in Part 4.1.3 below) and the appellate body decision in the shrimp/turtle case, affirming several Asian countries' challenge to the US ban on import of shrimp caught using trawl nets without turtle excluder devices (WTO, 1998). Other cases with environmental aspects are likely to arise.

A WTO dispute generally involves a small minority of Members and focuses on a specific trade-related measure. Such a dispute is not the ideal way to establish broad policies and principles on trade and environment. Dispute decisions also leave uncertainty about their impact on policy: technically, a decision in a dispute binds only the Members involved and does not control the outcomes of future disputes involving similar issues, although Members frequently look to the outcomes of disputes for guidance on how future disputes are likely to be decided.

A lack of transparency and lack of public participation also make these proceedings ill-suited venues for policy-making with increasingly broad implications. In democratic societies, more or less open policy-making processes enable decision-makers to obtain relevant information and perspectives, and give the resulting decisions legitimacy to the extent that various interest groups have had a chance to be involved in the process. In contrast, the WTO's current dispute settlement procedures are closed to public scrutiny or input. The media and the public cannot attend hearings, and documents filed by governments and opinions by decision-makers are restricted from public distribution for extensive periods. In the recent decision on the Shrimp/Turtle case, the appellate body ruled that dispute panels have the discretion to accept written submissions from citizens' groups (WTO, 1998). It remains to be seen whether future panels will relax their traditional reluctance to accept such outside submissions, and more generally whether procedures for resolving trade disputes can evolve to facilitate more transparency and public engagement.

4

Interactions between the CBD and WTO rules



The relationship between the WTO's rules and trade-related environmental measures (TREMs) found in multilateral environmental agreements (MEAs) such as the CBD has been the subject of debate for some time. As discussed in the introduction, there is a danger that the rules and policies of one regime may hinder the effectiveness of the other in the absence of proactive efforts to reconcile the two. For instance, interpretations of trade rules that do not take into account the CBD's objectives could interfere with the CBD's potential to guide, support and justify national conservation or sustainable use measures that include trade-related measures.

The CBD does not specifically obligate Parties to establish TREMs, although its provisions on genetic resources clearly empower Parties to control exports of those resources. Generally, the terms of the CBD neither mandate nor forbid, but would permit, the use of TREMs to implement provisions such as those of Article 11 which call for incentives for conservation and sustainable use. For the CBD to be effective, parties must strengthen their capacity to develop and implement measures that mitigate trade-related threats to biodiversity, through a co-operative process. Equally important, Parties will need to realise the CBD's potential to foster positive incentives for sustainable trade that promote both development and conservation through sustainable use and benefit sharing. To do this, it will be important for the CBD to build scientific and technical institutions (such as the SBSTTA and the Secretariat) and expertise to support findings about the necessity of TREMs and consideration of the impacts on trade.

Several other international institutions have important roles in relevant areas of environmental protection, conservation of natural resources, and development, as detailed in the following discussion. Regional institutions also have a role (see Chapter 5). CBD activities on a given issue should be defined in ways that complement existing programmes of work, help to fill gaps in effective coverage of the issue by other instruments, and identify where the CBD has the greatest comparative advantage.

4.1 Impacts of trade and trade rules on conservation and sustainable use

There are several important linkages between trade and trade rules and the conservation and sustainable use of biodiversity. As a preliminary matter, it will be important to develop a methodology and indicators for measuring the impacts of trade on biodiversity, as discussed in Part 4.1.1. Guidelines for assessing trade impacts on biodiversity would be very helpful to those seeking to develop policies that better manage its impacts, for example by encouraging those

involved in production and trade to internalise the risks to biodiversity and other environmental costs.

A second possible initiative, discussed in Part 4.1.2, that responds to impacts of trade on biodiversity would involve the development of standards or guidelines for biodiversity-friendly production in sectors covered by the ecosystem/sectoral themes considered by the CBD's Conference of Parties (COP) and Subsidiary Body for Scientific, Technical and Technological Advice (SBSTTA). The discussion of ecosystem themes (discussed in the box on p.22) has proved to be one of the more valuable efforts under the CBD to date. In these discussions, Parties have begun to define guidelines and procedures for achieving the Convention's objectives in ways that are oriented to the functions and processes – and the protection and maintenance – of entire ecosystems.

The linkage with trade arises if these biodiversity-friendly standards are linked to market-based mechanisms like eco-labelling for encouraging a shift to more sustainable production methods. When applied to products moving in international trade, distinctions between products based on how they are produced raise significant questions under existing interpretations of trade rules. If applied in the form of guidelines for investment, these standards could raise trade issues because of current pushes to “liberalise” investment and encourage the unrestricted international flow of capital.

A third issue area, discussed in Part 4.1.3, involves the hidden cost of trade represented by the introduction of alien species and consequent disruption of native species and ecosystems. Part 4.1.4 concerns a special kind of alien species introduction involving the deliberate introduction of genetically modified organisms (GMOs) and the need to ensure “biosafety” through the regulation of such introductions.

Part 4.1.5 discusses certain subsidies, which are critically important to both the trade and biodiversity regimes. Government subsidies in key sectors, especially forestry, fishing and farming, can create incentives to the private sector to extract resources and engage in practices that threaten biodiversity. Some of these subsidies conflict with both environmental and trade principles and could possibly be “disciplined” under existing rules or new agreements to be negotiated.

4.1.1 Indicators of trade impacts on biodiversity

In general, it is clear that some types of trade have impacts on biodiversity. Such impacts differ depending on the product traded, the method of production, the mode of transport, and other factors. Given the complexity of the impacts and their indirect nature, it is difficult to define precisely the impact of trade in a particular good. Yet the elaboration of standards for managing trade, as well as production of traded products, will require generally accepted technical frameworks for assessing the direct and indirect impacts associated with trade and the products moving in trade. Developing and applying such methodologies will require not only analysis of complex causal relationships but also collection of knowledge on the status of biodiversity itself.

Article 7 of the CBD requires Parties to assess and monitor the status of biodiversity and the activities likely to interfere with conservation and sustainable use, as far as possible and as appropriate. At the third COP of the CBD, in Buenos Aires in 1996, Parties stated that the development of indicators of the status of biodiversity was a “high priority” (COP III/10, ¶ 1, in

UNEP 1997, p.27). The COP also asked the GEF to provide financing for building capacity in developing countries to begin programmes to implement Article 7 (op. cit., ¶10). In addition, the COP called for the SBSTTA to conduct further work on indicators and assessment, particularly in the context of ecosystem themes (op. cit., ¶ 9).

COP III endorsed SBSTTA's recommendation on indicators, monitoring and assessment (op. cit., ¶ 2). SBSTTA emphasised the importance of conducting assessments and developing assessment guidelines in the context of ecosystem themes and the sectors that affect those ecosystems. Biodiversity assessments should be factored into management decisions in sectors with serious impacts on biodiversity, particularly those affecting marine, agricultural and forest ecosystems. The SBSTTA also stressed the importance of co-ordinating with relevant agencies and organisations, such as the Food and Agriculture Organization of the UN (FAO), as well as relevant international agreements, such as the UN Agreement on Straddling Stocks and Highly Migratory Species (SBSTTA II/1, in UNEP 1997, p.97).

Finally, SBSTTA also approved a framework proposed by the Secretariat for assessing processes and categories of activities that have or are likely to have significant adverse impacts on biodiversity.¹ The assessment framework includes "misdirected economic incentives" and "cost-benefit imbalances" as two of the six main "ultimate causes" of human activities threatening biodiversity. These categories logically would include certain aspects of trade policy, e.g. the success or failure of trade policy to allow for positive incentives for sustainable use, or its failure to provide for the internalisation of environmental costs including harm to biodiversity.

The CBD has an appropriate structure and mandate to assess trade's impacts on biodiversity because its mission explicitly embraces sustainable development, including conservation and sustainable use, and it has access to interdisciplinary biodiversity expertise through the SBSTTA. The SBSTTA's further work should include development of indicators for measuring the (direct and indirect) impact of trade and investment on biodiversity, probably focusing on specific ecosystems or sectors. The SBSTTA should consider establishing an *ad hoc* technical expert group to develop recommendations for SBSTTA on this topic².

Such work by a SBSTTA subgroup would complement the work of the WTO Committee on Trade and Environment, which has tended to scrutinise the impact on trade flows of environmental measures, while giving little attention to the impact on environment of trade flows and trade policy. This work could also be co-ordinated with the relevant work of other regional or international institutions, such as UNEP or the Commission on Environmental Co-operation established after the formation of the NAFTA. Especially in the context of the ecosystem/sectoral themes discussed above, this could be a fruitful direction for work. Provisions should also be made for educating the public on the results.

¹

Presented in UNEP/CBD/SBSTTA/2/3, ¶¶ 39–41. This framework is included as Appendix 5.

²

At COP IV, governments agreed that SBSTTA should establish a limited number of these groups to carry out the work of the SBSTTA. Such groups enable the SBSTTA to work with the Secretariat to assemble information from a broader, informal network of scientific and technical specialists on a particular issue, and to obtain peer review of SBSTTA work product. Through electronic mail and small meetings, such liaison groups will help the SBSTTA build a stronger basis for making recommendations at its periodic meetings.

Box 2. CBD ecosystem/sectoral themes within which trade impacts could be considered

Coastal and marine biodiversity. At its first meeting, the COP decided to explore implementation of the CBD within the context of ecosystem or sectoral themes. Thus, at its second meeting in November 1995, the COP agreed on the Jakarta Mandate on marine and coastal biodiversity. The Jakarta Mandate sets out general guidelines for applying the CBD to economic activities in marine and coastal areas, such as mariculture and fisheries. For example, the COP supported the SBSTTA's recommendation that Parties should ensure environmental impact assessment of mariculture projects, incorporating participation and needs of local and indigenous communities (COP II/10, ¶ 8; SBSTTA I/8, ¶ 15 I(b)).

The Jakarta Mandate has been cited as one of the CBD's most significant accomplishments to date. It contains a number of progressive, useful recommendations for developing a comprehensive, ecosystem-based approach to conservation and sustainable use. While the Mandate has significant shortcomings – it is poorly organised, includes inadequate coverage of some important issues such as land-based sources of marine pollution, and is excessively qualified with respect to certain issues that excited political opposition such as fisheries subsidies – it provides a good basis for beginning development of a framework of rules for ensuring achievement of the CBD's objectives in the marine and coastal context. Many of the Mandate's requirements apply to production methods for products, such as wild caught or aquacultured fish or shrimp, that are produced for export.

Agricultural biodiversity. At COP III in November 1996, agricultural biodiversity was the sectoral theme. The COP agreed on initial recommendations regarding implementation of the CBD in the context of agriculture, based in part on SBSTTA recommendations. They also set up a process for elaborating guidelines for implementing the CBD with respect to agrobiodiversity.

Forest biodiversity. At COP IV, the Parties agreed on a work plan for biodiversity of forests, a vast and increasingly imperilled reservoir of tremendous ecological and economic value. Yet because of the political difficulty of addressing forest use, in particular timber harvesting and trade, this plan is less well developed. In fact, it is not so much a set of recommendations for implementation as it is a programme of research and exchange of information. It is to be hoped that eventually Parties will muster the political will to co-operate internationally on implementation of the CBD with respect to this important aspect of biodiversity.

Inland water biodiversity. At COP IV in May 1998 in Bratislava, the Parties considered implementation of the CBD with respect to inland water ecosystems, including rivers, lakes and wetlands, which are primarily although not exclusively freshwater systems. Freshwater biodiversity is degraded or at risk in many regions; an ecosystem approach involving entire watersheds is critical for responding to the threats to freshwater ecosystems and species. The COP and preparatory meetings provided an opportunity to share lessons learned and begin developing principles and guidelines.

4.1.2 Guidelines for sustainable use of biological resources

There is an increasing interest in the use of market-based incentives to stimulate sustainable development. With increasing integration of the global economy, it is important to analyse the relationship of such incentives to international trade rules.

One critical issue involves how to set standards for production and other factors that a product must meet in order to qualify for market-based incentives such as eco-labels.³ When markets are not only national but regional and global, who sets the standards? In which national, regional or global forums? Who participates? Through what process? What principles should govern? How can we evaluate the quality and consistency of standards?

Among possible market-based incentives that could encourage biodiversity-friendly production, eco-labelling is currently receiving the most attention and generating the most activity. Private initiatives in several sectors relevant to biodiversity have started to develop international systems to support certification and labelling of products produced through environmentally friendly methods. These private initiatives have developed standards and accredited certifiers applying those standards. Examples include the Forest Stewardship Council (FSC), the International Federation of Organic Farm Movements (IFOAM), and (in earlier stages of development) the Marine Stewardship Council (MSC) and Marine Aquarium Fish Council.

Governments and supranational bodies have also developed voluntary eco-labelling schemes, such as the Blue Angel labelling programme in Germany. At the regional level, the European Community (EC) has promulgated guidelines for voluntary eco-labelling of office paper and other products. On the national level, there are numerous governmental labelling programmes, and many government procurement policies consider whether a product qualifies for a label among criteria for purchasing. If market incentives such as eco-labelling and certification have the impacts on the market that their promoters intend, then international organisations as well as government agencies will almost certainly seek to increase oversight or regulation of certification and eco-labelling.

While this discussion focuses on the example of eco-labels, standards and certification could be linked to other measures for controlling market activity. For instance, it could be useful to explore the development of national, regional and/or international guidelines or codes of conduct for investment in key sectors within each ecosystem theme, co-ordinating with institutions dealing with investment liberalisation such as the World Bank.

Another example is government procurement. By selecting goods whose production or use is more friendly to the environment than alternatives, governments can encourage the market to shift to greener production and increase the public benefit resulting from government expenditures. Yet government decisions about procurement, too, may be subject to trade rules. Currently, a limited number of WTO Members, primarily developed countries, have agreed to a “plurilateral” Agreement on Government Procurement, which imposes GATT-type disciplines on certain government buying practices. In the future, however, some governments may press for the negotiation of an agreement binding on all WTO Members. In light of past interpretations of GATT rules, as discussed, such rules could be held to limit the government’s ability to choose between products based upon how they were produced.

³

While the focus of this discussion is market-based incentives, standards are, of course, equally important for command and control regulations.

World Trade Organization. Already, some countries within the WTO are calling for the application of WTO disciplines to private eco-labelling schemes, and it is possible that a WTO panel may hear a challenge to an eco-labelling scheme in the next several years. Some governments seem to feel that effective standards for labels signifying environmentally friendly production are unacceptable barriers to market access. Many developing country governments are particularly concerned that such labels could operate to the disadvantage of developing country producers, which can afford neither to implement the relevant standards nor to go through the complex procedures necessary to qualify for a label. In response, labelling and certification initiatives will need to provide technical and financial assistance and perhaps other measures such as streamlined procedures for producers, especially smaller enterprises, in developing countries.

If a labelling scheme or regulation were challenged in a WTO dispute resolution proceeding, a WTO panel following interpretations of the most-favoured-nation and national treatment obligations used in past disputes might find such standards to conflict with the TBT Agreement or the GATT. Past interpretations have been “product-centred” and WTO Panels have been suspicious of distinctions among products based upon differences in production process methods (PPMs).

As noted in Part 3.3 above, the TBT Agreement lacks general environmental and natural resource exceptions, and it is uncertain whether the exceptions found in the GATT would apply under the TBT Agreement. In light of this, it will be important for the WTO to develop interpretations of its rules that better integrate environmental principles.

ISO. Some governments have tried to position the International Organization for Standardization (ISO) as the authoritative international standard-setter for certification of environmentally sound production of biological resources. ISO is an international federation of national standardisation bodies from some one hundred countries. ISO members work together to set global technical standards for a wide range of goods and services, with the goal of facilitating trade. From this perspective, the development of harmonised international standards for environmentally sound production is desirable as a way to reduce barriers to trade.

Other governments and some environmental groups have resisted such efforts on the grounds that ISO lacks the capacity to set such standards because it has little commitment to, or knowledge of, sustainable development, instead pursuing standard-setting purely as a mechanism for removing market barriers. This raises the risk that it will harmonise environmental standards downward, since that is often the easiest political path to the goal of harmonisation. Furthermore, there are objections that ISO is dominated by developed-country industries and is not easily accessible to environmental NGOs, or to governments and firms from the developing world.

In the wake of the 1992 Rio Earth Summit, ISO launched an effort to develop environmental standards in its ISO 14000 series on environmental management. Environmental officials and groups, however, have expressed serious concerns about the ISO 14000 initiative. While the requirement that companies obtain third-party verification offers some assurance of veracity, the standards themselves are significantly lacking in that they do not require compliance with any particular performance standard. Rather, they establish rules for a company’s environmental management system. Also lacking is any requirement that a company publicly disclose information on its environmental performance.

The CBD. As official international institutions begin to consider eco-labelling, it is essential to bring together the right mix of institutions. The CBD can and should play a valuable role by fostering a North-South dialogue to develop standards and associated incentives for sustainable use of biological resources that would benefit both developing and developed countries. Such standards could be developed in biological resource-based sectors that have major biodiversity impacts such as farming, fisheries and forestry.

The CBD has features that could enable it to provide a useful complement to institutions such as the WTO. The CBD's explicit combination of the objectives of conservation, sustainable use and benefit sharing could counterbalance the WTO's nearly exclusive focus on trade liberalisation. The CBD has access to interdisciplinary scientific and technical expertise through the SBSTTA, in contrast to the WTO's institutional emphasis on economics and trade policy. For holistic management of the impacts of production based upon biological resources, there is no better international instrument available nor is one likely to be negotiated soon. The CBD is equally well-suited to the review of policies in biological resource-based sectors for their consistency with principles of sustainable use.

Under the CBD, production standards linked to eco-labels could be seen as measures to *increase* access to green consumer markets for producers from developing as well as developed countries, rather than as market access barriers.⁴ The CBD could provide a forum for the development of guidelines for design and implementation of incentives to encourage producers to use such standards. Article 11 of the CBD calls for the development and use of incentives for conservation and sustainable use, and the Parties are beginning to co-operate on this requirement. Development of such standards and incentives could be coupled with effective financial and technical assistance to developing countries under the CBD's financial mechanism. Such guidelines could take the form of a resolution by the COP or eventually perhaps a protocol to the CBD.

One of the CBD's special strengths is its ability to elaborate ecosystem-oriented approaches for sectors that use biological resources intensively and that have major ecosystem impacts. Other international instruments and institutions also have a role in developing standards for sustainable production based upon biological resources. For instance, the Food and Agriculture Organization of the United Nations (FAO) has crucial technical expertise in the fisheries, farming and forestry sectors. Also important is the Convention on International Trade in Endangered Species (CITES). CITES has developed a relatively sophisticated set of institutions and procedures for evaluating the sustainability of trade in endangered or potentially threatened wildlife species and designing measures for managing trade to ensure sustainable use. Equally important, non-governmental initiatives like the Forest Stewardship Council (FSC) and the International Federation of Organic Agriculture Movements (IFOAM) have already done significant work that should be built upon and supported.

⁴

Commodity producers are notoriously at the mercy of market forces. It has been argued that segmentation of the market by differentiating different types of products within the commodity market is a good strategy for these producers to gain greater control over markets and prices (Von Moltke, 1998). This is precisely what French wine producers, for instance, have done with great success, using tools such as geographical indications (now protected under the TRIPS Agreement). Similarly, an eco-label segments the market by designating a product as special in comparison to the generic commodity.

To help define how the CBD and other instruments should move forward in this area, it could be useful to conduct a technical review of the roles that various international institutions have played and could play in international standard-setting and develop a set of objective criteria for assessing the competence of various types of institutions and procedures to set standards for environmentally friendly production in relevant sectors.

4.1.3 Alien species

The introduction of alien species is often associated with trade. Long-distance ocean shipping, for example, creates one of the principal threats to marine and coastal biodiversity, as ballast water is taken on in one harbour and then released into the waters at its destination, which may be thousands of kilometres away. In addition, imports of agricultural crops and forest products can carry pests and disease-causing or disease-carrying organisms within shipments, posing threats to the native species and varieties of the country of import. Trade may also involve deliberate introductions, for instance through the introduction of exotic plants for gardens, animals for sale as pets, or the import of genetically-modified crop varieties and other organisms, which may adversely impact ecosystems or crop varieties. The damage caused by the introduction of alien species represents a massive externalised cost of trade inflicted upon the environment of importing countries.

The WTO Agreement on Sanitary and Phytosanitary Measures (SPS) limits governmental power to impose import controls to protect human, animal and plant health and the environment, including measures for controlling the import of alien species (see Part 3.4 above). SPS measures have sometimes been used to block imports of food and agricultural goods. The SPS Agreement seeks to prevent these measures from being used as a form of protectionism; it does not ensure that governments have adequate protective measures in place. WTO Members can challenge other Members' import controls that violate the SPS Agreement's rules through the WTO dispute settlement body. Interpretations by the WTO appellate body in the United States/European Union dispute over bovine growth hormone⁵ have raised environmentalist concerns that the SPS Agreement may be applied in ways that "undermine the precautionary approach to environmental regulation" (Downes and Van Dyke, 1998, p.7).

Currently, there is no agreement establishing minimum standards for protection against alien species of a broad scope comparable to that of the SPS Agreement (Glowka and de Klemm, 1996, p.211). There are, however, multilateral instruments concerning particular types of introductions, such as the International Plant Protection Convention, aimed at preventing the spread of crop pests and diseases (*ibid.*). There are also non-binding guidelines regulating practices that lead to introductions of marine organisms such as discharge of ballast water (De Fontaubert, Downes and Agardy, 1996). Under the SPS Agreement, such "international standards" are presumed consistent with the SPS Agreement and the GATT.

Article 8(h) of the CBD provides generally that Parties shall prevent the introduction of, control and eradicate alien species that threaten biodiversity, "as far as possible and as appropriate". To date, there has been little emphasis on alien species *per se* within the CBD's international process. However, given the importance of the threat that alien species pose to

⁵ See *EC Measures Concerning Meat and Meat Products [Hormones]: A Report of the Appellate Body*, WTO, WT/DS26/AB/R, WT/DS48/AB/R ¶ 124 (January 16, 1998) (finding that the EU violated the SPS Agreement by banning imports of US products from cattle treated with bovine growth hormones.)

biodiversity, the SBSTTA should consider alien species and their relationship to trade in the framework of developing indicators for trade impacts under the ecosystem themes. In addition, Parties should also consider whether to develop a protocol to the CBD on alien species, elaborating on Article 8(h). An opportunity to consider such options will arise at the sixth COP, which will probably take place in 2002, when alien species will be a priority item on the agenda. Such decisions elaborating on Article 8(h) could conceivably acquire the status of international standards recognised under the SPS Agreement.

4.1.4 Biosafety protocol

The biosafety protocol negotiations are currently one of the most active areas of work under the CBD at the international level. Article 19(3) of the CBD provides that Parties:

shall consider the need for and modalities of a protocol setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.

At the second COP to the CBD in 1995, the Parties agreed to implement Article 19(3), establishing an Open-Ended *ad hoc* Group on Biosafety to negotiate a protocol “specifically focusing on transboundary movement,” including “appropriate procedure for advance informed consent”. After a series of negotiating sessions, governments were unable to agree upon a final text as planned in Cartagena, Colombia in February 1999, and the current goal is to conclude negotiations before the fifth COP in spring 2000.

Living modified organisms (LMOs) developed through genetic engineering – typically referred to as genetically modified organisms (GMOs) – are the primary object of concern which sparked negotiations toward a protocol. The commercial development and use of GMOs is an infant industry. Consequently, little concrete evidence has accumulated that LMOs have had significant impacts on biodiversity to date. There are concerns, however, that LMOs could have serious impacts in the future, as their development and release becomes more prevalent. A survey of the scientific literature acknowledged that genetic engineering and use of LMOs could have great benefits for agriculture in both developed and developing nations, but that their release also poses risks (Paoletti and Pimentel 1996). It recommended that “the release and regulation of genetically engineered organisms into the environment should be similar to the release and regulation of exotic plant and animal species into a new environment” (*ibid.*).

The precautionary approach requires careful assessment of products developed through rapidly changing biotechnological methods.⁶ The biosafety negotiations will be a significant test of whether countries can co-operate to adopt a truly precautionary approach to environmental impacts of a new technology.

⁶

The precautionary approach, which has been repeatedly endorsed by the international community, is referenced in the CBD’s Preamble, which notes that “where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat.”

With its focus on international transfer, the biosafety protocol is likely to regulate activities that are also covered by Uruguay Round agreements. If it takes a precautionary approach, the biosafety protocol will challenge the WTO to follow suit in interpreting the SPS Agreement, in spite of its traditional suspicion of trade-related environmental measures. The WTO obligations most likely to be implicated are the harmonisation and risk assessment obligations established in the TBT and SPS Agreements.⁷ The SPS Agreement limits the power of governments to restrict agricultural and food imports in order to protect health, the environment and food safety; thus it covers the international trade in GMOs contained in food or agricultural products that would be covered by a biosafety protocol.

The main issue relating to WTO rules that has arisen in biosafety negotiations to date involves the proposal by some countries to include a “savings clause” in the protocol. Proposed language for the savings clause states that “[t]he provisions of this Protocol shall not affect the rights and obligations of any Party deriving from any existing international agreement to which it is also a Party.”⁸ Under such a savings clause, if it seems that the treaty and an agreement existing at the time of the treaty’s adoption contradict each other, the earlier agreement takes priority and its rights and obligations are presumed to prevail.

Opposition to the inclusion of such a savings clause in the biosafety protocol arises because the international agreement most likely to be invoked under the clause would be the SPS Agreement. There is a risk that that Agreement, as interpreted by WTO institutions, could conflict with the provisions of a future biosafety protocol.

Already, the WTO dispute settlement appellate body ruled that the EU ban on imports of US beef containing bovine growth hormone violates the SPS Agreement. In that case, the appellate body articulated a relatively narrow concept of the precautionary principle. It interpreted the Agreement to impose on governments the burden of scientifically justifying health and safety regulations of food imports by demonstrating that the regulated substance poses an identifiable risk, in contrast to a precautionary approach that would require that substances be proven safe before they are added to food.⁹ There is a serious risk that the WTO’s approach could conflict with the precautionary principle as it is eventually defined by the Protocol.

7

The SPS addresses regulations intended to serve purposes like those that motivate negotiation of the biosafety protocol (food safety and protection of crops and indigenous species from threats posed by foreign plants). However, the scope of the SPS Agreement is limited to measures designed to protect against “pests”, “diseases”, “disease-carrying organisms”, “disease-causing organisms”, “contaminants”, “additives” and “toxins”. At the time of its negotiation, application to GMOs, where the risk comes from the product deliberately imported, rather than from some other organism inadvertently included within a shipment, was apparently not considered. Thus, it is conceivable that measures designed to control threats posed by GMOs may be subject to the TBT rather than SPS Agreement.

8

This kind of clause is termed a “savings clause” because it “saves” previous agreements, by declaring that the treaty will not affect the rights or obligations established in the other agreements. Another proposed version of this clause adds the phrase, “except where the exercise of those rights and obligations would cause serious damage or threat to biological diversity.” With this language, the proposed clause would be substantially the same as Article 22(1) of the CBD itself.

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See *EC Measures Concerning Meat and Meat Products [Hormones]: A Report of the Appellate Body*, WTO, WT/DS26/AB/R, WT/DS48/AB/R ¶ 124 (January 16, 1998).

The inclusion of a savings clause in an environmental agreement that allows it to be overridden by trade agreements reduces the potential for WTO law to evolve so as to incorporate principles of sustainable development, because WTO rules would automatically overrule any subsequent conflicting language in the MEA. Without a savings clause, countries will have a stronger incentive to reconcile the agreements so as to achieve both environmental and trade objectives.

Regardless of whether the protocol includes a savings clause, another mechanism for reconciliation is to recognise the protocol as an international standard which is presumed to be consistent with trade principles, at least to some extent, under the SPS and TBT Agreements (see Chapter 3). As a multilateral instrument that will presumably be open to all countries that have ratified the CBD, the biosafety protocol should qualify as such a standard. Particularly if a large percentage of the parties to the CBD become parties to the protocol, the measures included, as a reflection of the consensus of a large and diverse segment of the international community, should be likely to obtain a deferential review at the WTO. In addition, Article XX of the GATT should be understood to allow exceptions to general trade rules for TREMs contained in a multilateral instrument such as a biosafety protocol.

4.1.5 Subsidies

In all of the ecosystem themes described earlier, subsidies to the private sector to encourage exploitative activities are a contributing cause to biodiversity loss. In sectors such as fisheries, agriculture and forestry, subsidies may encourage over-investment in exploitative equipment, expansion of harvesting operations, and inefficient harvesting techniques, thereby significantly intensifying adverse impacts on biodiversity. Reduction, elimination or reform of these incentive structures could serve both conservation and trade goals as well as reducing government budgets.

The application of trade disciplines embodied in the WTO subsidies agreement would restrict governments' power to provide subsidies to domestic industries. At the same time, disciplines on subsidies must be designed to ensure that governments can continue to provide support for conservation measures of public benefit that are critical in achieving sustainable use of biological resources.¹⁰ In addition, they are highlighted here because subsidies are not only destructive of biodiversity but are also problematic in terms of trade policy because they distort markets, often inhibiting market access for foreign producers and violating the basic trade policy principle of comparative advantage. Hence, there may be avenues for challenging subsidies in mutually supportive ways within both the CBD and the WTO frameworks.

Subsidies in the context of trade liberalisation can be particularly problematic in economic terms for developing countries. If subsidies remain untouched while other trade distortions and barriers are reduced or removed, the economic impact of trade liberalisation on some countries may be severe.¹¹ Thus, accelerated reduction of subsidies in sectors like agriculture, where subsidy reduction has lagged, may be needed to address developing countries' development concerns.

¹⁰

To complicate the issue, some observers argue that even permissible conservation subsidies should be defined and implemented according to multilateral guidelines, because such subsidies could distort prices such that poorer countries would find it difficult to compete in a global market (Downes and Van Dyke, p.39).

Because of the complexity of subsidies issues and the specific issues that arise in particular sectors, it will probably be most useful to analyse subsidies under the CBD in the context of specific sectors or ecosystem themes. Within the marine and coastal ecosystem theme, for instance, attention could be given to fisheries subsidies.¹² Within the agricultural biodiversity theme, agricultural subsidies could be reviewed.

The WTO, similarly, appears to be organising its approach to subsidies around sectoral themes. In the CTE, for instance, there has been significant attention to subsidies for the fishing industry, with the issue being defined not only as an immediate economic problem, but also as a long term problem of conserving resources for sustainable use. There have been calls for a round of negotiations on reductions of fisheries subsidies. Some environmentalist observers have called for a process involving not only the WTO but also the FAO and the CBD, to ensure a balanced approach with adequate attention to conservation goals and adequate input of scientific and technical expertise relating to fisheries and their conservation (Downes and Van Dyke, 1998, p.41).

A number of developing and developed countries that are agricultural exporters have been actively promoting efforts to discipline agricultural subsidies in the WTO. Under current WTO rules, opportunities for addressing agricultural subsidies are limited. The Subsidies Agreement specifically does not apply to agricultural subsidies, while the Agreement on Agriculture takes only limited steps. More work is needed to assess more precisely the impact of these subsidies upon biodiversity. This work should be integrated into further talks on agriculture expected to begin early in the next millennium. It will be important to co-ordinate efforts so that the WTO's trade emphasis is complemented by perspectives from other institutions such as the CBD.

4.2 Sharing of benefits from genetic resources and traditional knowledge

Trade policy issues arise in connection with genetic resources and technology transfer under the CBD because both the CBD and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) of the WTO deal with intellectual property. The impact of intellectual property upon biodiversity, benefit sharing and traditional knowledge remains controversial. The CBD emphasises the need for measures to ensure control and a share of the benefits from genetic resources and from biodiversity-related traditional knowledge and informal innovations of local and indigenous communities, most of which are situated in developing countries. The TRIPS Agreement, on the other hand, emphasises patents and other intellectual property rights defined under conventional intellectual property regimes. These rights to date are primarily obtained and owned by inventors and corporations involved in the formal research sector in developed countries; indigenous traditional knowledge is not eligible for equivalent legal protection. Reconciling the different perspectives of the two agreements will be essential for crafting measures to accomplish their objectives.

¹¹

It has been argued that "survival in agricultural markets depends less on comparative advantage than on comparative access to subsidies. Liberalizing local food markets in the face of ... unequal competition is not a prescription for improving efficiency, but a recipe for the destruction of livelihoods on a massive scale" (UNDP 1997, p.86).

¹²

For discussion of resource-depleting subsidies in the fisheries sector, see Downes and Van Dyke, 1998, p.41, and sources cited therein.

As discussed in Chapter 2, the CBD addresses the positive potential for sustainable trade in genetic resources as well as the negative potential for trade to threaten biodiversity.¹³ The CBD establishes a new set of principles for the international exchange of genetic resources, defined as genetic material of actual or potential value from plants, animals and other organisms. Genetic resources are not only the fundamental basis of all biodiversity, but are of growing economic value for humanity as building blocks for a range of new products and technological applications in biotechnology, agriculture, medicine and other areas. New products derived from these resources are typically developed by researchers in developed countries, while most genetic resources used to date, particularly in the field of agriculture, come from tropical and subtropical regions found in developing countries.

Knowledge associated with biodiversity that is developed and held within traditional knowledge systems of indigenous and local communities can be a valuable lead to genetic resources or associated biochemicals that can be the basis for pharmaceuticals, herbal medicines and other products. Equally important, this knowledge is valuable in non-market applications such as locally used technologies and resources in conservation, agriculture and medicine.¹⁴

The linkages between genetic resources, benefit sharing, intellectual property and traditional knowledge are complex. At the most general level, key questions are:

- How can CBD Parties and the communities within them implement the CBD so as to maximise national and local benefits from sustainable development of their genetic resources and associated knowledge of indigenous and local communities?
- For CBD Parties that are WTO Members, do WTO rules interfere with or support such implementation, and how do they do so?
- Should WTO rules be modified or reinterpreted to take into account or provide greater support to CBD objectives? If so, how?

Within this framework, the most likely interplay between the CBD and WTO concerns the definition or application of intellectual property, and specifically the obligations of the TRIPS Agreement.¹⁵ The relation between intellectual property rights and the CBD's objectives has been a subject of controversy since its negotiation.¹⁶ Many developing countries and NGOs

¹³

While the CBD emphasizes the positive potential of genetic resources, its requirements of conservation and sustainable use apply to extraction of genetic resources just as they do to other economic activities. For example, genetic resources use may be subject to environmental assessment under Article 14, and may be regulated under Articles 8 and 10.

¹⁴

See Downes 1996, pp.207–208 and sources cited therein.

¹⁵

In theory, implementation of Article 15 on genetic resources could conflict with GATT principles of NT and MFN as well as the prohibition on quantitative restrictions (Downes, 1995, p.215). For example, a Party might discriminate against non-Parties seeking access to genetic resources on the ground that the CBD's duty to "endeavor to create conditions to facilitate access" does not apply to non-Parties. In practice, however, it is unlikely that a country would challenge another country's export limitations because demand is satisfied by the number of competing providers of genetic resources and biochemicals and the large collections of germplasm available through the International Agricultural Research Centers and national collections.

¹⁶

See, e.g. Glowka, *et al.*, 1994, p.84; Downes, 1993.

have criticised the use of intellectual property rights by corporate owners to “fence in” products and technologies based upon genetic resources. This appropriation, they argue, makes the products and technologies so expensive that it effectively excludes people in developing countries from access to products based upon genetic resources from their own territories, unfairly skewing the distribution of benefits. Many developed countries, on the other hand, have argued that intellectual property rights are useful tools that reward and encourage investment in the development of new commercial products that are valuable for society. Some have argued that by enhancing the value of genetic resources-based products, intellectual property rights indirectly enhance the value of genetic resources themselves. However, if this value cannot be captured by local stewards, it is unlikely to translate into additional incentives for conservation or additional benefits for the providers of the resources.

A few commentators have argued that indigenous and informal innovators in rural communities can and should use the existing intellectual property system to protect their knowledge and gain benefits from its use (e.g. Gupta, 1992). Yet most research indicates that most of the knowledge of indigenous and local communities, developed and conserved through generations and not attributable to identifiable individuals, cannot be protected under existing intellectual property laws (UNEP, 1994 ¶¶ 27–31; Axt *et al.*, 1993). Thus, some indigenous representatives call for a wholesale rejection of existing systems as inadequate, while some commentators argue for incremental modifications to the existing system that could help informal and indigenous knowledge-holders control access to their knowledge and gain greater benefits (Downes, 1997; Dutfield, 1997).

The most detailed public consideration of these issues thus far has been in the CBD COP. In 1996, the COP recognised that “further work is required to help develop a common appreciation of the relationship between intellectual property rights and the relevant provisions of the [TRIPS Agreement] and the [CBD]” (CBD COP Decision III/17 ¶ 8). The WTO CTE reached a similar conclusion at about the same time (WTO 1996 ¶ 208).

The 1996 CBD COP agreed on several steps to try to make progress on reconciling the contentious issues involved in the relationships between intellectual property rights and the CBD’s objectives and the relationships between the TRIPS Agreement and the CBD. One was to call on governments and relevant international and regional organisations to carry out case studies on intellectual property and biodiversity, considering issues such as knowledge of indigenous and local communities and the possible development of *sui generis* systems or alternative forms of protection.¹⁷ Such case studies could help to define the concerns about the application of intellectual property more specifically and clearly, as a step towards precisely defining legal or other measures that might be applied to address problems that may exist.

¹⁷

COP III/17, in UNEP 1997. The COP’s reference to “*sui generis* systems/approaches, or alternative forms of protection that could promote the Convention’s objectives” appears to refer to a broader category of intellectual property concepts or systems than that contemplated in the provision of Article 27.3(b) of the TRIPS Agreement. Article 27.3(b) provides that Parties may develop *sui generis* systems of plant variety protection, while the language of the COP decision appears in the context of a discussion of intellectual property rights in general that is not restricted to PVP but was based upon a background paper that ranged from patents to geographical indications. While the TRIPS Agreement does not bar WTO Members from creating *sui generis* rights that protect types of information not covered by conventional intellectual property, TRIPS would not require other WTO Members to recognize rights granted under a *sui generis* system if a CBD Party were to develop one.

Ultimately, it may be necessary to adopt modifications or additions to standard intellectual property systems at the national or international level or both, so as to avoid problematic treatment of indigenous rights over knowledge, and so as to enhance the benefits flowing back to the creators and conservators of traditional or informal knowledge about biodiversity who are also conservators of that biodiversity. However, the utility of such modifications remains controversial.

Any policy or legal research or proposals for reform must take into account that the various interest groups in this area have very different situations. Local and indigenous communities generally have much less bargaining power than the corporate or even academic researchers with whom they may be dealing. They typically have less access to legal advice and less knowledge about the potential economic value of their biodiversity or knowledge.

Legal and policy interactions relating to intellectual property are occurring in both national and international forums. At the national level, countries are faced with implementation of international obligations. Many WTO Members must revamp their intellectual property laws to meet the requirements of the TRIPS Agreement, while at the same time CBD Parties must implement legislation controlling access to their genetic resources and providing for benefit sharing. At the international level, there are several simultaneous discussions about intellectual property. The WTO TRIPS Council will review the provisions of Article 27.3(b) of the TRIPS Agreement (see Chapter 3 above), while the WTO CTE is discussing the relationships between TRIPS and the environment, and the CBD Secretariat will be attending meetings of the CTE.

One current issue involves Article 27.3(b) under the TRIPS Agreement.¹⁸ The article provides that WTO Members have discretion whether or not to recognise patents on modified plants or animals, but they must recognise patents on modified micro-organisms. It requires Members to provide adequate and effective plant variety protection (PVP) but allows them to use *sui generis* systems (i.e. new, distinctive systems).

The TRIPS Council is to review this provision in 1999. Some developed country Members may press to expand the patenting requirement to cover plants and animals, and possibly seek to replace the *sui generis* option for plant variety protection with a reference to the standards of the International Union for the Protection of New Plant Varieties (UPOV). Some developing countries are likely to oppose such a step, for reasons discussed above, and there may be proposals to expand the scope of the exception.

Finally, it is important to note that intellectual property issues also arise in the discussions of plant genetic resources for food and agriculture within the FAO. The FAO's Commission on Plant Genetic Resources for Food and Agriculture is currently hosting negotiations to revise the

18

In the past, there was a broader debate between developed and developing countries about the role of patents in technology transfer. Many developed countries argued that strong patent systems are essential to encourage investment in development of new technology and investment in facilities for diffusing technologies in countries outside the country of invention. Developing countries in contrast argued that intellectual property policies must be tailored to fit a country's specific level of development, and that less developed countries may prefer weaker intellectual property protection as a way of encouraging copying and "catching up" in terms of technological development. The text of the CBD to some extent reflects these opposing views. However, the generic question of the role of patents in technology development and diffusion seems to be diminishing in importance in intergovernmental talks, as WTO Members implement the TRIPS standards on patents.

FAO undertaking on plant genetic resources with the goal of submitting it as a protocol to the CBD. While the CBD emphasises bilateral exchanges of genetic resources and related benefits among Parties, the FAO talks are leaning toward the crafting of a multilateral system of more or less free exchange for certain crops for which genetic resources are widely exchanged. The FAO trend reflects the fact that most countries' agricultural sectors depend heavily on exchange of genetic resources, and negotiation of bilateral agreements for each exchange would impose burdensome transaction costs. Within the FAO context, the issues of farmers' rights and intellectual property rights are still unresolved.

5

Relevant forums and processes



As discussed, the relationships between the CBD and the WTO regimes are manifold and complex. Thus, there are many forums and processes at the global, regional and national levels that are relevant to the achievement of integrated implementation of the two regimes.

These forums and processes are organised around several thematic areas. One area is conservation of biodiversity/species/habitat/environmental protection, which comprises agreements such as the CBD or CITES. Another is organised around the use of a resource; like the first thematic area it involves conservation, but the emphasis is on use. Examples of instruments in this category include the FAO, the International Whaling Commission and the UN Straddling Stocks Agreement. The CBD itself includes elements and principles that fit in both of these categories.

A third category focuses on products and tends to be organised around product types. This category includes agreements such as the International Tropical Timber Agreement as well as other commodity agreements. A fourth category comprises trade, development and economic policy, and includes the WTO, the OECD and regional agreements and organisations such as the North American Free Trade Agreement (NAFTA) or the European Union (which remains founded upon economic union although its activities have broadened far beyond that base). Finally, another thematic category involves development assistance and includes institutions like the World Bank, regional development banks and bilateral aid agencies.

At all levels, these different categories of agencies will need to strengthen ties and communicate more effectively among themselves. In many countries, environment ministries and trade ministries will have to initiate or strengthen communications. At the international level, more co-operation among environment and trade-related organisations is needed, to ensure that common goals are realised and potential conflicts are defused.

At the global level, most of the relevant forums have been discussed in Chapters 2–4 of this paper. The primary global forums are, of course, the institutions associated with the CBD and the WTO. CBD institutions include the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), the Conference of Parties (COP), the Clearinghouse Mechanism on Scientific and Technical Co-operation, and the Secretariat. The main WTO institutions include the Committee on Trade and Environment, the TRIPS Council, the Agriculture Committee and the TBT Committee.

Other international instruments that are relevant to trade and biodiversity include CITES, the Straddling Stocks Agreement and the United Nations Convention on the Law of the Sea, as well

as other international environmental agreements. Also important are the Commission on Sustainable Development, UNEP, the World Intellectual Property Organisation (WIPO) (including the UPOV Secretariat), the Consultative Group on International Agricultural Research, the FAO, Codex Alimentarius, ISO, the Intergovernmental Forum on Forests, the World Bank, the International Finance Corporation, the OECD, the Global Environment Facility, the International Tropical Timber Organisation, and possibly the International Monetary Fund. The involvement of national, regional and international NGOs will be essential. Trade associations in relevant sectors such as crop breeding or biotechnology should also be involved.

While this paper focuses on the interplay of global regimes, the issues it covers will also play out at the regional level in trade, development and environmental institutions. They may need to develop programmes of co-operative action, guidelines for national legislation, regional legal agreements, or possibly new regional institutions.

Regional, national and sub-national forums are equally important. Ultimately international trade and environment policies are formulated in national capitals by legislatures and government agencies involved in debates in civil society that include many different interests and constituencies. Relevant agencies include ministries of environment, trade, foreign affairs, and bilateral assistance. At the same time, these policies are also relevant at the state, provincial, municipal and local levels, and authorities and communities at these levels must also be involved. Interests and impacts at the local level in communities are often quite different from those in national capitals.

Regional institutions based upon trade and economic relationships include the European Union, Mercosur, NAFTA, Asian Pacific Economic Co-operation (APEC), South African Development Community (SADC), the Andean Pact and the African Economic Community. (Examples are described in Appendix 6.) The Andean Pact has already passed a directive on the implementation of the CBD's provisions on access and benefit sharing for genetic resources.

Other important regional groupings are based upon political or geographical alignments such as the Organization of American States, the Organisation of African Unity (OAU), Association of South East Asian Nations (ASEAN) and the G-77+China. Already, a task force within the OAU has drafted model legislation on community rights and access to biological resources that includes provisions on intellectual property rights, genetic resources and traditional knowledge (Masood 1998).

Also potentially relevant are regional environmental institutions such as regional fisheries management organisations, and the UNEP Regional Seas Programme. In addition, regional development banks are highly relevant. Other pertinent regional groupings include informal groupings/alliances based upon shared economic or ecological interests, such as the Cairns group (organised in agricultural trade talks), and the Valdivia group (consisting of Southern Hemisphere countries), as well as UN regional economic commissions such as the United Nations Economic Commission for Europe and the Economic Commission of Latin America and the Caribbean.

The optimal roles of the various organisations and instruments will depend on their comparative advantages in carrying out the various functions needed at the international and regional level. Relevant functions include the establishment of norms, rules and guidelines; the collection of information needed for decision-making; provision of financial and technical

assistance; and review of progress and performance (Kimball and Laughlin, 1998), including dispute settlement and enforcement. Different institutions will have different actual and potential capacity to carry out these various functions. Different combinations of instruments will need to be brought together in different ways for different problems. The organisation of efforts in various forums must also take into account questions of scale: that is, some problems need global solutions, while others need regional or national solutions. Further analysis is needed to help the various instruments and institutions define appropriate roles and linkages for achieving integrated implementation of the two regimes.

Appendices

Appendix 1

Parties to the Convention on Biological Diversity

OPENED FOR SIGNATURE: 5 June 1992, Rio de Janeiro

ENTRY INTO FORCE: 29 December 1993

STATUS: Signatories: 168. Parties: 175. (15 January 1999)

Participant	Ratification, accession (a), acceptance (A), approval (AA)
Albania	5 Jan 1994 a
Algeria	14 Aug 1995
Angola	1 Apr 1998
Antigua and Barbuda	9 Mar 1993
Argentina	22 Nov 1994
Armenia	14 May 1993 A
Australia	18 Jun 1993
Austria	18 Aug 1994
Bahamas	1 Sep 1993
Bahrain	30 Aug 1996
Bangladesh	3 May 1994
Barbados	10 Dec 1993
Belarus	8 Sep 1993
Belgium	22 Nov 1996
Belize	30 Dec 1993
Benin	30 Jun 1994
Bhutan	25 Aug 1995
Bolivia	3 Oct 1994
Botswana	12 Oct 1995
Brazil	28 Feb 1994
Bulgaria	17 Apr 1996
Burkina Faso	2 Sep 1993
Burundi	15 Apr 1997
Cambodia	9 Feb 1995 a
Cameroon	19 Oct 1994
Canada	4 Dec 1992
Cape Verde	29 Mar 1995
Central African Republic	15 Mar 1995

Participant	Ratification, accession (a), acceptance (A), approval (AA)	
Chad	7 Jun 1994	
Chile	9 Sep 1994	
China	5 Jan 1993	
Colombia	28 Nov 1994	
Comoros	29 Sep 1994	
Congo	1 Aug 1996	
Cook Islands	20 Apr 1993	
Costa Rica	26 Aug 1994	
Côte d'Ivoire	29 Nov 1994	
Croatia	7 Oct 1996	
Cuba	8 Mar 1994	AA
Cyprus	10 Jul 1996	
Czech Republic	3 Dec 1993	
Democratic People's Republic of Korea	26 Oct 1994	
Democratic Republic of the Congo	3 Dec 1994	
Denmark	21 Dec 1993	
Djibouti	1 Sep 1994	
Dominica	6 Apr 1994	
Dominican Republic	25 Nov 1996	
Ecuador	23 Feb 1993	a
Egypt	2 Jun 1994	a
El Salvador	8 Sep 1994	
Equatorial Guinea	6 Dec 1994	
Eritrea	21 Mar 1996	AA
Estonia	27 Jul 1994	
Ethiopia	5 Apr 1994	A
European Community	21 Dec 1993	
Fiji	25 Feb 1993	
Finland	27 Jul 1994	
Former Yugoslav Rep. Of Macedonia	2 Dec 1997	a
France	1 Jul 1994	a
Gabon	14 Mar 1997	
The Gambia	10 Jun 1994	
Georgia	2 Jun 1994	
Germany	21 Dec 1993	
Ghana	29 Aug 1994	
Greece	4 Aug 1994	
Grenada	11 Aug 1994	

Participant	Ratification, accession (a), acceptance (A), approval (AA)
Guatemala	10 Jul 1995
Guinea	7 May 1993
Guinea-Bissau	27 Oct 1995
Guyana	29 Aug 1994
Haiti	25 Sep 1996
Honduras	31 Jul 1995
Hungary	24 Feb 1994
Iceland	12 Sep 1994
India	18 Feb 1994
Indonesia	23 Aug 1994
Iran (Islamic Republic of)	6 Aug 1996
Ireland	22 Mar 1996
Israel	7 Aug 1995
Italy	15 Apr 1994
Jamaica	6 Jan 1995
Japan	28 May 1993 A
Jordan	12 Nov 1993
Kazakhstan	6 Sep 1994
Kenya	26 Jul 1994
Kiribati	16 Aug 1994 a
Kyrgyzstan	6 Aug 1996 a
Lao People's Democratic Republic	20 Sep 1996 a
Latvia	14 Dec 1995
Lebanon	15 Dec 1994
Lesotho	10 Jan 1995
Liechtenstein	19 Nov 1997
Lithuania	1 Feb 1996
Luxembourg	9 May 1994
Madagascar	4 Mar 1996
Malawi	2 Feb 1994
Malaysia	24 Jun 1994
Maldives	9 Nov 1992
Mali	29 Mar 1995
Marshall Islands	8 Oct 1992
Mauritania	16 Aug 1996
Mauritius	4 Sep 1992
Mexico	11 Mar 1993
Micronesia (Federated States of)	20 Jun 1994

Participant	Ratification, accession (a), acceptance (A), approval (AA)
Monaco	20 Nov 1992
Mongolia	30 Sep 1993
Morocco	21 Aug 1995
Mozambique	25 Aug 1995
Myanmar	25 Nov 1994
Namibia	16 May 1997
Nauru	11 Nov 1993
Nepal	23 Nov 1993
New Zealand	16 Sep 1993
Nicaragua	20 Nov 1995
Niger	25 Jul 1995
Nigeria	29 Aug 1994
Niue	28 Feb 1996 a
Norway	9 Jul 1993
Oman	8 Feb 1995
Pakistan	26 Jul 1994
Palau	6 Jan 1999 a
Panama	17 Jan 1995
Papua New Guinea	16 Mar 1993
Paraguay	24 Feb 1994
Peru	7 Jun 1993
Philippines	8 Oct 1993
Poland	18 Jan 1996
Portugal	21 Dec 1993
Qatar	21 Aug 1996
Republic of Korea	3 Oct 1994
Republic of Moldova	20 Oct 1995
Romania	17 Aug 1994
Russian Federation	5 Apr 1995
Rwanda	29 May 1996
Saint Kitts and Nevis	7 Jan 1993
Saint Lucia	28 Jul 1993 a
Saint Vincent and the Grenadines	3 Jun 1996 a
Samoa	9 Feb 1994
San Marino	28 Oct 1994
Senegal	17 Oct 1994
Seychelles	22 Sep 1992
Sierra Leone	12 Dec 1994 a

Participant	Ratification, accession (a), acceptance (A), approval (AA)	
Singapore	21 Dec 1995	
Slovakia	25 Aug 1994	AA
Slovenia	9 Jul 1996	
Solomon Islands	3 Oct 1995	
South Africa	2 Nov 1995	
Spain	21 Dec 1993	
Sri Lanka	23 Mar 1994	
Sudan	30 Oct 1995	
Suriname	12 Jan 1996	a
Swaziland	9 Nov 1994	
Sweden	16 Dec 1993	
Switzerland	21 Nov 1994	
Syrian Arab Republic	4 Jan 1996	AA
Tajikistan	29 Oct 1997	a
The Netherlands	12 Jul 1994	A
Togo	4 Oct 1995	A
Tonga	19 May 1998	a
Trinidad and Tobago	1 Aug 1996	
Tunisia	15 Jul 1993	
Turkey	14 Feb 1997	
Turkmenistan	18 Sep 1996	a
Uganda	8 Sep 1993	
Ukraine	7 Feb 1995	
United Kingdom	3 Jun 1994	
United Republic of Tanzania	8 Mar 1996	
Uruguay	5 Nov 1993	
Uzbekistan	19 Jul 1995	a
Vanuatu	25 Mar 1993	
Venezuela	13 Sep 1994	
Viet Nam	16 Nov 1994	
Yemen	21 Feb 1996	
Zambia	28 May 1993	
Zimbabwe	11 Nov 1994	

Adapted from http://www.biodiv.org/conv/RATIFY_date.htm

Appendix 2

WTO membership

The following 133 governments and one regional economic organisation have accepted the Marrakesh Agreement Establishing the World Trade Organization. Their membership in the World Trade Organization is effective as of the dates indicated.

Angola (1 December 1996)	Cyprus (30 July 1995)
Antigua and Barbuda (1 January 1995)	Czech Republic (1 January 1995)
Argentina (1 January 1995)	Dem. Rep. of the Congo (1 January 1997)
Australia (1 January 1995)	Denmark (1 January 1995)
Austria (1 January 1995)	Djibouti (31 May 1995)
Bahrain (1 January 1995)	Dominica (1 January 1995)
Bangladesh (1 January 1995)	Dominican Republic (9 March 1995)
Barbados (1 January 1995)	Ecuador (21 January 1996)
Belgium (1 January 1995)	Egypt (30 June 1995)
Belize (1 January 1995)	El Salvador (7 May 1995)
Benin (22 February 1996)	European Community (1 January 1995)
Bolivia (13 September 1995)	Fiji (14 January 1996)
Botswana (31 May 1995)	Finland (1 January 1995)
Brazil (1 January 1995)	France (1 January 1995)
Brunei Darussalam (1 January 1995)	Gabon (1 January 1995)
Bulgaria (1 December 1996)	Gambia (23 October 1996)
Burkina Faso (3 June 1995)	Germany (1 January 1995)
Burundi (23 July 1995)	Ghana (1 January 1995)
Cameroon (13 December 1995)	Greece (1 January 1995)
Canada (1 January 1995)	Grenada (22 February 1996)
Central African Republic (31 May 1995)	Guatemala (21 July 1995)
Chad (19 October 1996)	Guinea Bissau (31 May 1995)
Chile (1 January 1995)	Guinea, Rep. of (25 October 1995)
Colombia (30 April 1995)	Guyana (1 January 1995)
Congo (27 March 1997)	Haiti (30 January 1996)
Costa Rica (1 January 1995)	Honduras (1 January 1995)
Côte d'Ivoire (1 January 1995)	Hong Kong (1 January 1995)
Cuba (20 April 1995)	Hungary (1 January 1995)

Iceland (1 January 1995)	Netherlands – For the Kingdom in Europe and for the Netherlands Antilles (1 January 1995)
India (1 January 1995)	
Indonesia (1 January 1995)	New Zealand (1 January 1995)
Ireland (1 January 1995)	Nicaragua (3 September 1995)
Israel (21 April 1995)	Niger (13 December 1996)
Italy (1 January 1995)	Nigeria (1 January 1995)
Jamaica (9 March 1995)	Norway (1 January 1995)
Japan (1 January 1995)	Pakistan (1 January 1995)
Kenya (1 January 1995)	Papua New Guinea (9 June 1996)
Korea (1 January 1995)	Panama (6 September 1997)
Kuwait (1 January 1995)	Paraguay (1 January 1995)
Kyrgyz Republic (20 December 1998)	Peru (1 January 1995)
Latvia (10 February 1999)	Philippines (1 January 1995)
Lesotho (31 May 1995)	Poland (1 July 1995)
Liechtenstein (1 September 1995)	Portugal (1 January 1995)
Luxembourg (1 January 1995)	Qatar (13 January 1996)
Macau (1 January 1995)	Romania (1 January 1995)
Madagascar (17 November 1995)	Rwanda (22 May 1996)
Malawi (31 May 1995)	Saint Lucia (1 January 1995)
Malaysia (1 January 1995)	Saint Kitts and Nevis (21 February 1996)
Maldives (31 May 1995)	Saint Vincent and the Grenadines (1 January 1995)
Mali (31 May 1995)	Senegal (1 January 1995)
Malta (1 January 1995)	Sierra Leone (23 July 1995)
Mauritania (31 May 1995)	Singapore (1 January 1995)
Mauritius (1 January 1995)	Slovak Republic (1 January 1995)
Mexico (1 January 1995)	Slovenia (30 July 1995)
Mongolia (29 January 1997)	Solomon Islands (26 July 1996)
Morocco (1 January 1995)	South Africa (1 January 1995)
Mozambique (26 August 1995)	Spain (1 January 1995)
Myanmar (1 January 1995)	Sri Lanka (1 January 1995)
Namibia (1 January 1995)	

Suriname (1 January 1995)	United Arab Emirates (10 April 1996)
Swaziland (1 January 1995)	United Kingdom (1 January 1995)
Sweden (1 January 1995)	United States (1 January 1995)
Switzerland (1 July 1995)	Uruguay (1 January 1995)
Tanzania (1 January 1995)	Venezuela (1 January 1995)
Thailand (1 January 1995)	Zambia (1 January 1995)
Togo (31 May 1995)	Zimbabwe (3 March 1995)
Trinidad and Tobago (1 March 1995)	

Tunisia (29 March 1995)
Turkey (26 March 1995)
Uganda (1 January 1995)

WTO OBSERVERS

Note: All observer countries have applied to join the WTO except the Holy See (Vatican) and Ethiopia, Cape Verde and Bhutan.

Albania, Algeria, Andorra, Armenia, Azerbaijan, Belarus, Bhutan, Cambodia, Cape Verde, Chinese Taipei, Croatia, Estonia, Ethiopia, Former Yugoslav Republic of Macedonia, Georgia, Holy See (Vatican), Jordan, Kazakhstan, Lao People's Democratic Republic, Lithuania, Moldova, Nepal, People's Republic of China, Russian Federation, Samoa, Saudi Arabia, Seychelles, Sudan, Sultanate of Oman, Tonga, Ukraine, Uzbekistan, Vanuatu, Vietnam.

Source: WTO Web site (<http://www.wto.org/wto/about/organs6.htm>)

Appendix 3

Selected provisions of the Convention on Biological Diversity

(italics added to emphasise key provisions)

Preamble

The Contracting Parties,

Conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components, ...

Concerned that biological diversity is being significantly reduced by certain human activities, ...

Noting that it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source,

Noting also that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat,

Noting further that the fundamental requirement for the conservation of biological diversity is the *in-situ* conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings, ...

Stressing the importance of, and the need to promote, international, regional and global cooperation among States and intergovernmental organizations and the non-governmental sector for the conservation of biological diversity and the sustainable use of its components[.]
...

Article 1. Objectives

The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the *conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources*, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

Article 2. Use of Terms

For the purposes of this Convention:

“Biological diversity” means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes

of which they are part; this includes diversity within species, between species and of ecosystems.

“Biological resources” includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.

Article 4. Jurisdictional Scope

Subject to the rights of other States, and except as otherwise expressly provided in this Convention, the provisions of this Convention apply, in relation to each Contracting Party:

- (a) In the case of components of biological diversity, in areas within the limits of its national jurisdiction; and
- (b) *In the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.*

Article 5. Cooperation

Each Contracting Party shall, as far as possible and as appropriate, *cooperate with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.*

Article 6. General Measures for Conservation and Sustainable Use

Each Contracting Party shall, in accordance with its particular conditions and capabilities:

- (a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned; and
- (b) *Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.*

Article 7. Identification and Monitoring

Each Contracting Party shall, as far as possible and as appropriate, in particular for the purposes of Articles 8 to 10:

- (c) *Identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques[.]*

Article 8. In-situ Conservation

Each Contracting Party shall, as far as possible and as appropriate:

- (c) *Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;*

- (g) Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health;
- (h) *Prevent the introduction of, control or eradicate those alien species* which threaten ecosystems, habitats or species;
- (j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices;
- (l) *Where a significant adverse effect on biological diversity has been determined pursuant to Article 7, regulate or manage the relevant processes and categories of activities*[.]

Article 10. Sustainable Use of Components of Biological Diversity

Each Contracting Party shall, as far as possible and as appropriate:

- (b) *Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts* on biological diversity;
- (c) *Protect and encourage customary use of biological resources* in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements[.]

Article 11. Incentive Measures

Each Contracting Party shall, as far as possible and as appropriate, *adopt economically and socially sound measures that act as incentives* for the conservation and sustainable use of components of biological diversity[.]

Article 14. Impact Assessment and Minimizing Adverse Impacts

1. Each Contracting Party, as far as possible and as appropriate, shall:

- (a) *Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects* on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for *public participation* in such procedures;
- (b) Introduce appropriate arrangements to ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account;
- (c) Promote, on the basis of reciprocity, notification, exchange of information and consultation on activities under their jurisdiction or control which are likely to significantly affect adversely the biological diversity of other States or areas beyond the limits of

national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements, as appropriate[.]

Article 15. Access to Genetic Resources

1. Recognizing the sovereign rights of States over their natural resources, *the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.*
2. Each Contracting Party shall endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention.
3. For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention.
4. Access, where granted, *shall be on mutually agreed terms* and subject to the provisions of this Article.
5. Access to genetic resources *shall be subject to prior informed consent* of the Contracting Party providing such resources, unless otherwise determined by that Party.
6. Each Contracting Party shall endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties.
7. Each Contracting Party *shall take legislative, administrative or policy measures*, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 *with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources.* Such sharing shall be upon mutually agreed terms.

Article 16. Access to and Transfer of Technology

1. Each Contracting Party, recognizing that technology includes biotechnology, and that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of this Convention, undertakes subject to the provisions of this Article *to provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.*
2. Access to and transfer of technology referred to in paragraph 1 above *to developing countries shall be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanism established by Articles 20 and 21. In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms which recognize and are consistent with the*

adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraphs 3, 4 and 5 below.

3. *Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below.*
4. *Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access to, joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries and in this regard shall abide by the obligations included in paragraphs 1, 2 and 3 above.*
5. *The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.*

Article 19. Handling of Biotechnology and Distribution of its Benefits

2. *Each Contracting Party shall take all practicable measures to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Contracting Parties. Such access shall be on mutually agreed terms.*
3. *The Parties shall consider the need for and modalities of a protocol setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.*
4. *Each Contracting Party shall, directly or by requiring any natural or legal person under its jurisdiction providing the organisms referred to in paragraph 3 above, provide any available information about the use and safety regulations required by that Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned to the Contracting Party into which those organisms are to be introduced.*

Article 22. Relationship with Other International Conventions

1. *The provisions of this Convention shall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity.*

Appendix 4

Selected Decisions of the Conference of the Parties of the Convention on Biological Diversity

Agricultural Biodiversity – Trade-Related Provisions

Decision III/11, Conservation and Sustainable Use of Agricultural Biological Diversity

The Conference of the Parties, ...

24. *Recalls* paragraph 39 (g) from the World Food Summit Plan of Action and encourages the World Trade Organization through its Committee on Trade and Environment, in collaboration with other relevant organizations, to consider developing a better appreciation of the relationship between trade and agricultural biodiversity and, in this consideration, recommends the collaboration with the Convention on Biological Diversity and requests the Executive Secretary to convey this request to the World Trade Organization.

Decision IV/6, Agricultural biological diversity

The Conference of the Parties ...

9. *Requests* the Executive Secretary, as a complement to decision III/17 [on intellectual property rights] paragraph 6 [asking the Executive Secretary to apply for observer status at the WTO Committee on Trade and Environment], to apply for observer status in the Committee on Agriculture of the World Trade Organization for the purpose of representing the Convention in meetings whose agendas may influence implementation of decision III/11 and related decisions of the Conference of the Parties;
10. *Requests* the Executive Secretary to report to the Conference of the Parties on the impact of trade liberalization on the conservation and sustainable use of agricultural biological diversity in consultation with relevant bodies, such as the World Trade Organization;

Inland Water Ecosystems – Trade-Related Provisions

Decision IV/4, Status and trends of the biological diversity of inland water ecosystems and options for conservation and sustainable use – Annex I, ¶ 9(m), Economic and legal instruments.

The Conference of the Parties recommends that Parties: ...

- (i) Review the range and effectiveness of national incentives, subsidies, regulations, and other relevant financial mechanisms which have the ability to affect inland water ecosystems, whether adversely or beneficially;
- (ii) Redirect financial support measures which run counter to the objectives of the Convention regarding the biological diversity of inland waters;

- (iii) Implement targeted incentive and regulatory measures that have positive impacts on the biological diversity of inland waters;
- (iv) At appropriate levels (regional, national, subnational and local), encourage the identification of stressed rivers, the allocation and reservation of water for ecosystem maintenance, and the maintenance of environmental flows as an integral component of appropriate legal, administrative and economic mechanisms;

Intellectual Property, Traditional Knowledge and Genetic Resources
Decision III/14, Implementation of Article 8 (j)

The Conference of the Parties, ...

4. *Requests* the Executive Secretary to remain informed as to relevant international processes and bodies, including, *inter alia*, those under the auspices of the Commission on Human Rights and the Commission on Sustainable Development, Convention 169 of the International Labor Organization, the World Intellectual Property Organization, the World Bank, the Food and Agriculture Organization of the United Nations, the United Nations Educational, Social, and Cultural Organization, and the World Trade Organization, and to provide periodic reports related to Article 8 (j) and related articles to the Conference of the Parties. ...

Decision III/15, Access to Genetic Resources

The Conference of the Parties, ...

8. *Requests* the Executive Secretary to cooperate closely with the World Trade Organization through the Committee on Trade and the Environment to explore the extent to which there may be linkages between Article 15 and relevant articles of the Agreement on Trade-related Aspects of Intellectual Property Rights. ...

Decision III/17, Intellectual Property Rights

The Conference of the Parties, ...

1. *Encourages* Governments, and relevant international and regional organizations, to conduct and communicate to the Executive Secretary, for dissemination through means such as the clearing-house mechanism, case studies of the impacts of intellectual property rights on the achievement of the Convention's objectives, including relationships between intellectual property rights and knowledge, practices and innovations of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity. Such studies could:
 - (a) Take into account the information and options for future work contained in the preliminary study prepared by the Executive Secretary, contained in document UNEP/CBD/COP/3/22;
 - (b) Take into consideration existing and potential interrelationships between intellectual property rights and other aspects of the Convention implementation, including, for example, implementation of Articles 8 (j), 15 and 16;

- (c) Involve, through consultation or cooperation, relevant international organizations, as well as relevant regional and national bodies, stakeholders, and others with relevant expertise, as appropriate;
 - (d) Consider the role and the potential of existing intellectual property rights systems in achieving the objectives of the Convention, including, *inter alia*, in facilitating technology transfer and in arrangements by which interested parties including indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and countries may determine access to and share equitably the benefits of genetic resources or knowledge, innovations and practices;
 - (e) Consider the development of intellectual property rights, such as *sui generis* systems/approaches, or alternative forms of protection that could promote achievement of the Convention's objectives, consistent with the Parties' international obligations;
 - (f) Reflect the importance of coordinating efficiently with work undertaken pursuant to other elements of the work programme of the Conference of the Parties and work programmes of other relevant organizations; ...
3. *Requests* the Executive Secretary to contact relevant international organizations, particularly the World Intellectual Property Organization, to invite them to take into account in their development cooperation programmes, where appropriate, the need to build the capacity to achieve the objectives of the Convention on Biological Diversity as related to intellectual property rights; ...
 6. *Requests* the Executive Secretary to apply for observer status in the Committee on Trade and the Environment of the World Trade Organization, for the purpose of representing the Convention on Biological Diversity in meetings whose agendas have a relationship with the Convention; ...
 8. *Recognizes* that further work is required to help develop a common appreciation of the relationship between intellectual property rights and the relevant provisions of the Agreement on Trade-related Aspects of Intellectual Property Rights and the Convention on Biological Diversity, in particular on issues relating to technology transfer and conservation and sustainable use of biological diversity and the fair and equitable sharing of benefits arising out of the use of genetic resources, including the protection of knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity. ...

IV/15. The relationship of the Convention on Biological Diversity with the conventions, other international agreements, institutions and processes of relevance

The Conference of the Parties ...

7. *Takes note* of the Executive Secretary's observer status in the Committee on Trade and Environment of the World Trade Organization for the purpose of representing the Convention on Biological Diversity in meetings whose agendas have relevance to the Convention;
8. *Also notes* that some Parties to the Convention on Biological Diversity, particularly many developing countries, are not members of the World Trade Organization, and are therefore

limited in their abilities to present their concerns regarding biological diversity at the World Trade Organization;

9. *Stresses* the need to ensure consistency in implementing the Convention on Biological Diversity and the World Trade Organization agreements, including the Agreement on Trade-Related Aspects of Intellectual Property Rights, with a view to promoting increased mutual supportiveness and integration of biological diversity concerns and the protection of intellectual property rights, and invites the World Trade Organization to consider how to achieve these objectives in the light of Article 16, paragraph 5, of the Convention, taking into account the planned review of Article 27, paragraph 3 (b), of the Agreement on Trade-Related Aspects of Intellectual Property Rights in 1999;
10. *Emphasizes* that further work is required to help develop a common appreciation of the relationship between intellectual property rights and the relevant provisions of the Agreement on Trade-Related Aspects of Intellectual Property Rights and the Convention on Biological Diversity, in particular on issues relating to technology transfer and conservation and sustainable use of biological diversity and the fair and equitable sharing of benefits arising out of the use of genetic resources, including the protection of knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.
11. *Requests* the Executive Secretary to enhance cooperation with the World Intellectual Property Organization with respect to the Organization's programme of work; ...
17. *Requests* the Executive Secretary to report to the Conference of the Parties at its fifth meeting on the collaborative efforts with the Commission on Sustainable Development and with the Committee on Trade and Environment of the World Trade Organization, including suggestions for improving this relationship.

Economic Incentives

Decision III/18, Incentive Measures

The Conference of the Parties ...

Encourages Parties to review their existing legislation and economic policies, to identify and promote incentive[s] for the conservation and sustainable use of components of biological diversity, stressing the importance of taking appropriate action on incentives that threaten biological diversity;

Encourages Parties to ensure adequate incorporation of the market and non-market values of biological diversity into plans, policies and programmes and other relevant areas, inter alia, national accounting systems and investment strategies. ...

IV/10. Measures for implementing the Convention on Biological Diversity

A. Incentive measures: consideration of measures for the implementation of Article 11

The Conference of the Parties ...

1. *Encourages* Parties, Governments and relevant organizations:
 - (a) To promote the design and implementation of appropriate incentive measures, taking fully into account the ecosystem approach and the various conditions of the Parties and

employing the precautionary approach of Principle 15 of the Rio Declaration on Environment and Development, in order to ... integrate biological diversity concerns in sectoral policies, instruments and projects;

- (b) As a first step towards formulating incentive measures, to identify threats to biological diversity and underlying causes of reduction or loss of biological diversity ...
- (d) To develop supportive legal and policy frameworks for the design and implementation of incentive measures;
- (e) To carry out participatory consultative processes at the relevant level to define the clear and target-oriented incentive measures to address the identified underlying causes of biodiversity reduction or loss and unsustainable use;
- (f) To identify perverse incentives and consider the removal or mitigation of their negative effects on biological diversity in order to encourage positive, rather than negative, effects on the conservation and sustainable use of biological diversity; ...

5. *Requests* the Executive Secretary:

- (a) To compile the information received from Parties, Governments and relevant organizations and to facilitate the exchange of information through appropriate means, such as the clearing-house mechanism, taking full advantage of existing and ongoing work of Parties and relevant organizations in this area;
- (b) To prepare in collaboration with the Organisation for Economic Development and Cooperation (OECD), the World Conservation Union (IUCN) and other relevant organizations, a background paper containing further analysis of the design and implementation of incentive measures for the conservation and sustainable use of biodiversity, as it is related to the incentive measures in the thematic focus of the fifth meeting of the Conference of the Parties, with the aim of developing guidance to Parties;
- (c) To describe, in this document, ways and means to identify perverse incentives and possibilities to remove or mitigate their negative effects on biological diversity.

Appendix 5

Activities and processes adversely affecting biodiversity

Proximate threats

39. The following factors may have a direct effect on biological diversity:

- i) Overharvest or overkill of wild species;
- ii) Introduced species as competitors, predators, carriers of disease, or habitat disruptors;
- iii) Habitat destruction or deterioration through conversion, fragmentation, or changing habitat quality;
- iv) Pollution by toxins (e.g., heavy metals), changing nutrient balances (e.g., eutrophication, acid rain), or physical contaminants (e.g., sedimentation and/or siltation); and
- v) Climate change, either locally or globally.
- vi) Radioactive contaminants*

Categories of activities leading to these threats

40. The following categories of human activity may lead to the proximate threats listed above:

- i) Harvest of wild species for consumption (may also support conservation)*
- ii) Killing of wild species as pests or weeds
- iii) Deliberate introduction of exotic species
- iv) Accidental introduction of exotic species
- v) Conversion of land to settled agriculture
- vi) Shifting cultivation on too short a cycle
- vii) Overstocking by domestic livestock
- viii) Accidental or deliberate burning, or change in natural fire regime
- ix) Mining/dredging
- x) Dam construction
- xi) Canalisation
- xii) Road construction

* Added by SBSTTA (see report, 16).

- xiii) Urbanisation
- xiv) Overuse for recreational reasons
- xv) Drainage of wetlands
- xvi) Burning of fossil fuels
- xvii) Use of potentially polluting chemicals in agriculture
- xviii) Use of potentially polluting chemicals in industrial processes
- xix) Production of polluting chemicals as a by-product of industrial processes
- xx) Production of human effluent and other domestic waste products
- xxi) Improper land management.*

Ultimate causes of these threats

41. Within the context of human society, most of these threats can ultimately be attributed to five main factors:

- i) land tenure;
- ii) population change;
- iii) cost-benefit imbalances;
- iv) cultural factors; and
- v) misdirected economic incentives.
- vi) national policy failure.*

Monitoring processes and categories of activities that may have an adverse effect on biological diversity

42. Monitoring the threats to biological diversity identified above is not a straightforward task, chiefly because many threats operate over a very wide area and because, as described above, impacts may be experienced far distant from the source of the threat, as in the case of air- and water-borne pollutants. Three complementary approaches may be adopted to deal with this: extensive monitoring, usually using remote sensing or aerial photography; detailed sampling of particular sites; and the use of pressure indicators to predict areas or ecosystems that may be expected to be under adverse influence.

43. Remote sensing can be used to monitor extensive areas, but at present has limitations in terms of the environmental parameters it can record. It is, for example, extremely useful for monitoring the clearance and fragmentation of forest cover, but is much less useful for monitoring changes in forest quality or in species composition within forests. Similarly, it may be able to give some indication of sediment loads in rivers, but cannot generally register soluble pollutants.

*

Added by SBSTTA (see report, 16).

44. Sampling particular sites may give a much more accurate local picture, but extrapolation to a more general picture is often based on questionable assumptions. For example, the intensity of hunting and its effect on wildlife populations has been found to be highly variable over quite short distances among communities in the Amazon basin.
45. The use of pressure indicators—for example, proximity to urban or industrial centres, or roads—may allow broad indications of threat, but because of local variability, these require ground-truthing before they can be used with confidence.
46. The SBSTTA may wish to review these methods of monitoring pressures and consequently to recommend ways in which their use can be integrated.

Source: Excerpted from United Nations Environment Programme. Convention on Biological Diversity. Subsidiary Body for Scientific, Technical and Technological Advice. Second Meeting. 1996. Identification, Monitoring and Assessments of Components of Biological Diversity and Processes Which Have Adverse Impacts. Nairobi: UNEP. UN Doc. No. UNEP/CBD/SBSTTA/2/3. Web location: <http://www.biodiv.org>

Appendix 6

Examples of regional trade agreements

Mercosur (Mercado Común del Sur, Southern Common Market) is a regional trade agreement between Argentina, Brazil, Paraguay and Uruguay. The Mercosur countries have declared the goal of becoming a customs union with tariff-free internal trade and a common external tariff for all of South America by 2006. In preparation for this, Mercosur has signed trade agreements with both Chile and Bolivia; is considering Venezuela, Columbia and Peru for membership; and is involved also in negotiations with the Andean Community.

The Andean Community, originally the Andean Pact, is a regional free trade agreement created in 1969, the members of which are Bolivia, Columbia, Ecuador, Venezuela and Peru. Peru recently announced its intention of withdrawing from the community. At the same time, the community is discussing possible integration with Mercosur to unite most of South America by 1998. The Andean Community has recently established a parliament and a council of foreign ministers. Of particular relevance to the CBD, the Andean Community has adopted a directive establishing guidelines for national legislation regulating the use of genetic resources, providing for equitable benefit sharing.

The Asia-Pacific Economic Co-operation forum (APEC), founded in 1989, includes 18 countries situated around the Pacific Rim, which in 1995 accounted for about 55% of total world income, 46% of global trade, and over half of the world's emissions of pollutants, energy use and food production and consumption (IISD 1997). Several APEC members have been identified as countries especially rich in biodiversity by various measures, including Australia, China, Indonesia, Malaysia, Mexico, Papua New Guinea and the Philippines. APEC has held a ministerial meeting on environment, and has working groups on relevant issues such as liberalisation of trade in timber, liberalisation of trade in fisheries products, and marine conservation.

The South Asian Association for Regional Co-operation (SAARC) was formed in 1985. Its membership includes India, Bangladesh, Pakistan, Nepal, Sri Lanka, the Maldives and Bhutan. The formation of SAARC represented a step forward in reducing regional tensions. Its members gather regularly to discuss a wide range of political, economic and social issues. SAARC has, however, found it difficult to translate the product of member discussions into action, in part due to a lack of adequate financial resources. SAARC does not yet have an integrated environmental policy agenda.

The North American Free Trade Agreement (NAFTA) is a regional trade agreement to which Canada, Mexico and the United States are parties. The NAFTA provides that countries "should not" relax environmental measures to encourage investment in its territory. The NAFTA was accompanied by an environmental "side agreement", which establishes a tripartite Commission on the Environment (CEC). Citizens may file complaints with the CEC against governments for failure to enforce environmental laws, and the CEC Secretariat can conduct an investigation in appropriate cases. The CEC has also conducted studies on ecological and economic relationships among the NAFTA partners, as well as some work on assessing environmental impacts of NAFTA.

The Free Trade Area of the Americas (FTAA). At the 1994 Summit of the Americas in Miami, Brazil, Canada, the United States and 32 other countries committed to negotiate a free trade agreement among the countries of the Western Hemisphere by 2005. Environmental issues are also being discussed, but have been de-linked from trade discussions. In December 1996, Bolivia hosted a ministerial summit on sustainable development at which governments agreed upon a 65-item plan of action dealing with sustainable agriculture, forests, cities and communities, environmental health and education, energy and minerals, water resources and coastal regions.

The South African Development Community (SADC) includes Zimbabwe, Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, Swaziland, United Republic of Tanzania, Zambia, and is chaired by South Africa. In environmental activities, South Africa, concerned with drought and the dependence of its rural communities on wood for fuel, hosted a conference in Pretoria in 1995 on river basin management and regional afforestation. The environment will likely receive additional consideration as SADC seeks further economic integration, including negotiation of a NAFTA-like regional free trade agreement, and improvement of the regional climate for investment (Reuters, Oct. 23, 1996).

The European Union began as an economic union but has moved over time towards harmonisation of standards and policies in many fields. The European Union currently has 15 members and is considering applications from additional states in Eastern Europe. The Union now has regional policies on agriculture, fisheries and the environment, including aspects of wildlife and habitat conservation. The institutions of the European Union express and maintain an ever closer union of European nations and have become more numerous as the Union's responsibilities have broadened. They include the European Parliament, the Council of the European Union, the European Commission, the European Court of Justice, the European Investment Bank, the Committee of the Regions European Ombudsman, and the European Monetary Institute. The European Environment Agency was established in Copenhagen in 1994 with the mission of providing environmental information to members and the public; information on the state of European fauna, flora and "biotopes" is among its priorities.

Appendix 7

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Appendix 8

Selected web resources relevant to trade and biodiversity

I. Basic documents

- A. Convention on Biological Diversity – Convention Text
Available at <http://www.biodiv.org/convtext/cbd0000.htm>
This site provides the full text of the Convention on Biological Diversity, signed in Rio in 1992.
- B. The WTO Agreements (summaries)
Available at <http://www.wto.org/wto/legal/uround.htm>
Summaries of the agreements achieved at the Final Act of the Uruguay Round are available on these pages.

II. Economic uses of biodiversity, biotechnology and genetic resources

- A. Biotrade Initiative (UNCTAD)
Available at <http://www.biotrade.org/>
The United Nations Conference on Trade and Development's (UNCTAD) BIOTRADE initiative aims to stimulate investment and trade in biological resources as a means of furthering the objectives of the CBD.
- B. Human Genome Diversity Project
<http://www.stanford.edu/group/morrinst/hgdp.html>
The Human Genome Diversity Project is an international project that seeks to understand the diversity and unity of the entire human species. This site contains a summary report of the project, frequently asked questions, and a model ethical protocol for sampling.
- C. Center for Economic Botany
Available at <http://www.rbgekew.org.uk/ceb/ebinfo.html>
This site is maintained by the Royal Botanic Gardens at Kew, and contains ethnobotany and conservation information, as well as links to publications and other web pages.
- D. The National Center for Biotechnology Information (NCBI)
Available at <http://www.ncbi.nlm.nih.gov/>
NCBI works to develop new information technologies to aid in the understanding of fundamental molecular and genetic processes that control health and disease. This site includes several genomic sequence databases and links to recent biotechnology research.
- E. Biospace – The Hub Site for Biotechnology
Available at <http://www.biospace.com/>
This site is updated daily with the latest developments in biotechnology, including technical material.

III. General information about biodiversity

- A. Biodiversity and Biological Collections WWW Server
Available at <http://biodiversity.uno.edu>
This site includes extensive links to biological resources with particular attention to the study of various organisms.
- B. Center for Conservation Biology Network
Available at <http://conbio.rice.edu/network/>
This site provides information about the CCBN as well as educational information directed at students and a virtual library of ecology, biodiversity, and the environment

IV. Intellectual property rights and traditional knowledge

- A. Center for Indigenous Knowledge for Agriculture and Rural Development
Available at <http://monet.npi.msu.su/itap-mirror/cikard/CIKArt.html>
This site contains a large, searchable database of indigenous knowledge.
- B. IPR Policy Issues (by Consumers Project on Technology)
Available at <http://www.cptech.org/ip/ip.html>
This US based project started by Ralph Nader produces analysis of IPR law and policy aimed at preserving the public domain and protecting against excessive corporate control of technology and information.
- C. The Intellectual Property Mall (Franklin Pierce Law Ctr.)
Available at <http://www.ipmall.fplc.edu/>
Everything you ever wanted to know about intellectual property is here, with a library, research tips, bulletins, discussions, etc. Produced by Franklin Pierce Law Center, one of the top IPR law schools in the US.
- D. Working Conference on Endangered Languages, Knowledge, and Environments
Available at http://ucjeps.berkeley.edu/Endangered_Lang_Conf/Endangered_Lang.html#PARTICIPANTS
This site includes the abstracts of papers delivered at a three-day, interdisciplinary conference held in Berkeley in October 1996 that examined the loss of linguistic, cultural, and biological diversity.
- E. World Intellectual Property Organization (WIPO)
Available at <http://www.wipo.org/eng/index.htm>
This site offers a more technical look at intellectual property, with texts of international agreements, publications, seminars, and links to the mediation centre.

V. Trade, environment, and sustainable development

- A. *Bridges*, the International Center for Trade and Sustainable Development (ICTSD) Weekly News Digest
Available at <http://www.ictsd.org/>
The goal of this weekly publication is to bridge the gap between the trade community and the sustainable development communities.

- B. Trade and Environment Database Homepage
Available at <http://gurukul.ucc.american.edu/ted/TED.HTM>
This page describes various projects underway dealing with trade and environment issues and is intended to provide context for research and discussion of trade and environment topics.
- C. UNCTAD Site on Trade and Environment
Available at <http://www.unctad.org/en/techcop/sust0101.htm>
This page describes the work being undertaken by the United Nations Committee on Trade and Development (UNCTAD). Projects underway include thematic and country-specific case studies and the preparation of a TRAINFORTRADE package to help prepare developing countries for trade.

VI. Relevant institutions – international organizations

These sites contain general info about the institution's projects, often with publications and links to relevant sites.

- A. Convention on Biological Diversity – Linkages
Available at <http://www.mbnet.mb.ca/linkages/biodiv.html>
- B. Convention on Biological Diversity – Secretariat and Clearinghouse Mechanism Home Page
Available at <http://www.biodiv.org>
- C. Food and Agriculture Organization of the United Nations
Available at <http://www.fao.org/default.htm>
- D. Global Environmental Facility
Available at <http://www.worldbank.org/html/gef/gefgraph.htm>
- E. International Monetary Fund Home Page
Available at <http://www.imf.org/>
- F. ISO (International Organization for Standards)
Available at <http://www.iso.ch/>
- G. Organisation for Economic Co-operation and Development (OECD)
Available at <http://www.oecd.org/>
- H. The World Bank Group
Available at <http://www.worldbank.org/>
- I. UNDP–United Nations Development Programme
Available at <http://www.undp.org/>
- J. World Bank
Available at <http://www.worldbank.org/html/extdr/backgrd/ibrd/ibrd.htm>
- K. World Trade Organization
Available at <http://www.wto.org/>

VII. Relevant institutions – non-governmental organizations (a sampling)

The following sites are maintained by NGOs working in related fields and include relevant information about their activities or reports on research, position papers, and other resources.

- A. Asia Pacific Regional Environment Network Home
Available at <http://www.nautilus.org/aprenet/>
- B. Forest Stewardship Council
Available at <http://www.chebucto.ns.ca/Environment/FSC/>
- C. Rural Advancement Foundation International
Available at <http://www.rafi.ca/>
- D. Terralingua: Partnerships for Linguistic and Biological Diversity
Available at <http://cougar.ucdavis.edu/nas/terralin/home.html>

Appendix 9

List of acronyms

APEC	Asia Pacific Economic Co-operation
ASEAN	Association of Southeast Asian Nations
CBD	Convention on Biological Diversity
CEC	Commission on Environmental Cooperation
CITES	Convention on International Trade in Endangered Species
COP	Conference of the Parties
CTE	Committee on Trade and the Environment (WTO)
EC	European Community
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FSC	Forest Stewardship Council
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
GMOs	Genetically Modified Organisms
ICLARM	International Center for Living Aquatic Resources Management
IFC	International Finance Corporation
IFOAM	International Federation of Organic Agriculture Movements
IMF	International Monetary Fund
IPRs	Intellectual Property Rights
ISO	International Organization on Standardization
ITTO	International Tropical Timber Organization
LMOs	Living Modified Organisms
MAI	Multilateral Agreement on Investment
MEA	Multilateral Environmental Agreement
Mercosur	Mercado Común del Sur, Southern Common Market
MFN	Most-Favoured-Nation
MSC	Marine Stewardship Council

NAFTA	North American Free Trade Agreement
NGO	Non-Governmental Organization
NPR	Non-Product-Related
NT	National Treatment
OECD	Organisation for Economic Co-operation and Development
PPMs	Production or Processing Methods
SAARC	South Asian Association for Regional Co-operation
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SADC	South African Development Community
SPS	Sanitary and Phytosanitary Measures
TBT	Technical Barriers to Trade
TREMs	Trade-Related Environmental Measures
TRIMS	Trade-Related Investment Measures
TRIPS	Trade-Related Aspects of Intellectual Property Rights
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Committee for Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UPOV	International Union for the Protection of New Varieties of Plants
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

Appendix 10

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